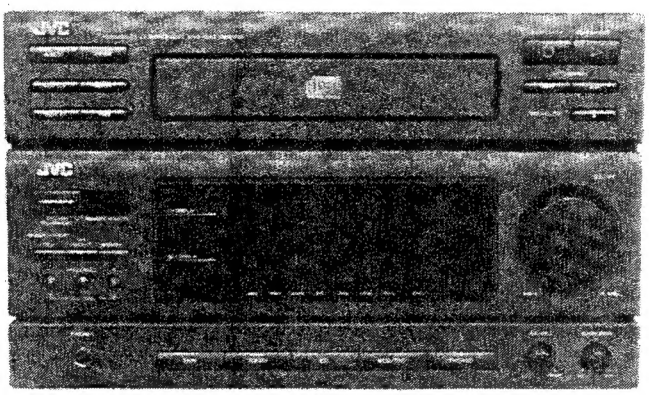
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

CA-MX50BK

(UNiT No. AX-MX50BK)



* Refer to the CA-MX50BK (S.M. No. 20239) as instruction manual.

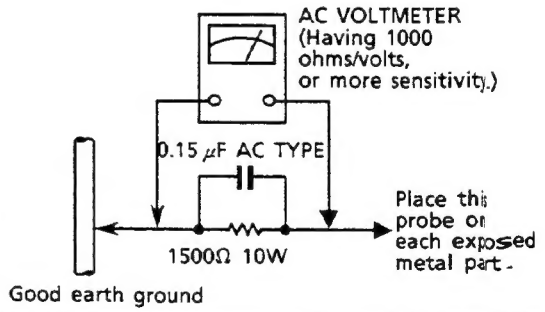
COMPACT disc DIGITAL AUDIO

Contents

No. 20241
Mar. 1991

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, contorl shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. CAUTION : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. CAUTION : If safety switches malfunction, the laser is able to function.
6. CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
7. CAUTION : The compact disc player provides a laser diode of wavelength 780-790nm and optical output power typical 3mW at the laser diode.

VARNING : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning, når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL

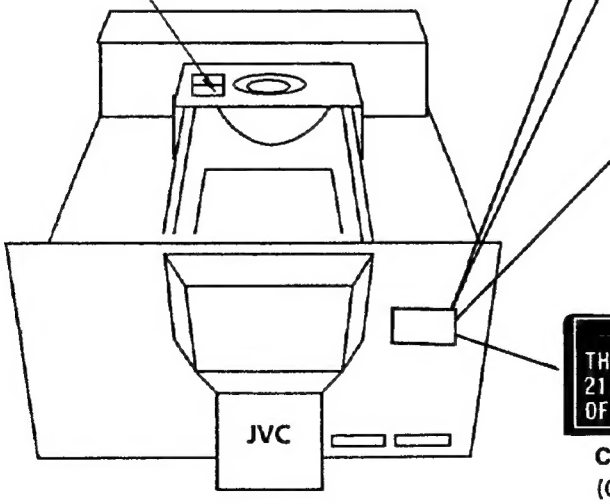
DANGER: Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)

VARNING: Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen. (s)

ADVARSEL: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. (d)

VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)

(Except for the U.S.A.)



CLASS 1
LASER PRODUCT

CLASSIFICATION LABEL
(Except for the U.S.A. and Canada)

WARNING SHOCK HAZARD
DO NOT OPEN
AVIS: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

(Only for Canada)

CERTIFIED ONLY TO CANADIAN ELECTRICAL CODE.
CERTIFIÉ EN VERTU DU CODE CANADIEN DE L'ELECTRICITÉ SEULEMENT.

(Only for Canada)

CERTIFICATION
THIS PRODUCT COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE.

CERTIFICATION LABEL BY DHHS
(Only for the U.S.A.)

Specifications

CD / Amplifier Component

Dimensions	10-7 / 8 x 6-3 / 4 x 12-3 / 8 inches (275 x 170 x 314 mm)
Weight	13.9 lbs (6.3 kg)

Amplifier

Output Power	**35 watts per channel, min. RMS, both channels driven into 4 ohms from 40 Hz to 20 kHz, with no more than 0.9 % total harmonic distortion**
Total Harmonic Distortion at Half-Rated Power	0.07 %
Input Sensitivity / Impedance	
(1kHz) VCR / DAT	300mV / 75k ohms
PHONO	2.5mV / 50k ohms
SEA Center Frequencies	63, 160, 400, 1k, 2.5k, 6.3k, 16kHz
SEA Control range	± 10dB

Compact Disc Player

Dynamic Range (1kHz)	90dB
Signal-to-Noise Ratio	100dB
Frequency Response	5Hz - 20kHz
Wow and Flutter	Unmeasurable

* Design and specifications subject to change without notice

General

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC120V ∿, 60Hz	117W
Canada	AC120V ∿, 60Hz	130W, 170VA
U.K.	AC240V ∿, 50Hz	267W
Australia	AC240V ∿, 50Hz	267W
Continental Europe	AC230V ∿, 50Hz	138W
Other area	AC 110 / 127 /220 / 240V ∿, selectable, 50 / 60Hz	138W

Tape Deck / Tuner Conponent

Dimensions	10-7 / 8 x 6-3 / 4 x 11 inches (275 x 170 x 279 mm)
Weight	7.5 lbs (3.4 kg)

Tape Deck

Frequency Response	Metal : 30Hz - 17,000Hz CrO2 : 30Hz - 16,000Hz Normal : 30Hz - 15,000Hz
Wow and Flutter' (WRMS)	0.08 %

FM Tuner

Tuning range	87.5 MHz - 108.0 MHz
Usable Sensitivity	0.95μV / 75 ohms (10.8dBf)
Signal-to-Noise Ratio (IHF-A Weighted)	MONO (at 85dBf) 80dB STEREO (at 85dBf) 73dB

AM Tuner

Tuning range	
MW	
U.S.A. and Canada	530 kHz ~ 1710 kHz
U.K., Continental Europe and Australia	522 kHz ~ 1629 kHz
Other area	531 kHz ~ 1602 kHz 530 kHz ~ 1600 kHz
LW	144 kHz ~ 353 kHz

Accessories

FM Feeder antenna	1
AM loop antenna	1
Speaker cable	2
Remote Controller (RM-SE MX70U)	1
Batteries (UM-4 / AAA / R03)	2

Explanation of Power Engine

1. **Outline**

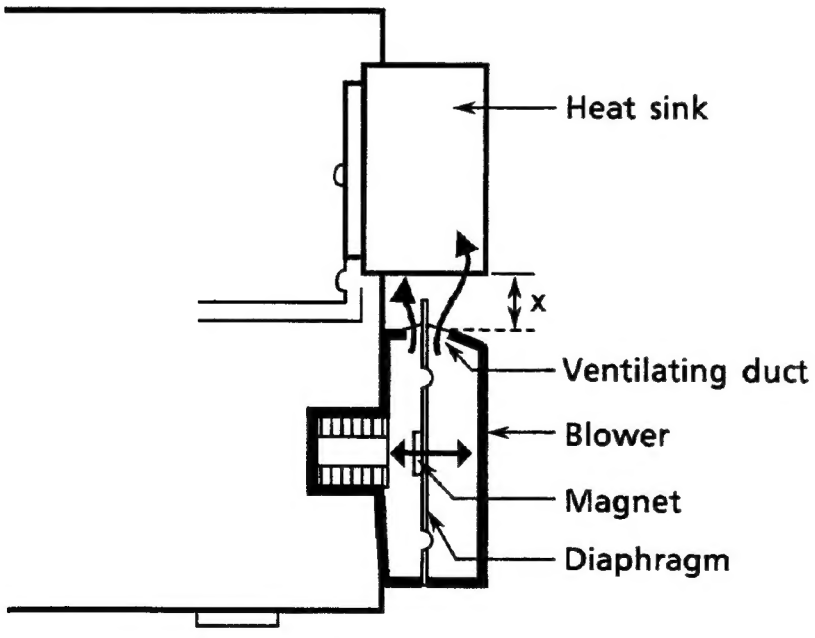
Power engine is meaning of blower which gives a breeze to the heat sink by vibration such as a speaker's corn.
This is installed under the heat sink and it is cooled compulsorily.
By using the power engine, the heat sink dimensions are able to make a 1/4 than normal venturation's heat sink, and then it is possible to make a small size amplifier.
Microprocessor detects the temperature of heat sink through thermistor, and the breeze which is three types blows the heat sink.

2. **Principle**

The temperature of the heat sink is detected a changed resistor's value of the thermistor and the signal inputs to microprocessor. The microprocessor judges the heat sink temperature and selects a suitable operation from 6 steps,and then a driving signal goes to power engine.

3. **Power engine operations**

"Temperature"	"Operation"	"Port Voltage"
~35°C	Power engine off	
35°C~60°C	10Hz	2.0~2.65V
60°C~85°C	14Hz	2.65~3.6V
85°C~105°C	16Hz	3.6~4.2V
105°C~135°C	Speaker relay off	4.2~4.55V
135°C~	Power primary off	4.55V~



Structure of Power Engine

Disassembly Procedures

(1) Removing the top cover

1. Remove 2 screws on each side and 2 screws on the rear side.
2. Pull the top cover slightly backward and lift it while spreading the backs of the left and right sides to remove it.

(2) Removing the tray Ass'y

1. Remove the top cover.
2. Turn the power on and press OPEN / CLOSE button to move the tray out.Then turn the power off.
3. While pressing the tray stopper, pull the tray toward front to move out it.
4. If the power can not be turned on due to malfunction, etc., turn the plastic screw located on the bottom plate under the front panel in the direction of the arrow (clockwise) to move the tray out , as shown in the Fig.2.

(3) Removing the CD Chassis base

1. Remove the top cover.
2. Remove the tray Ass'y.
3. Remove 4 screws ①.(Fig.1)
4. Take the CD chassis base out with mechanism Ass'y and CD P.C. board.(Fig.5)

(4) Confirming the System control and power amplifier P.C. board

1. Remove the CD chassis base with the mechanism Ass'y and the CD P.C. board.
2. Remove 4 screws ② fastening the system control and power amplifire P.C.board.(Fig.3)
3. Remove 4 screws ③ fastening the rear side.(Fig.4)
4. Confirm the power amplifier P.C. board as shown in the Fig .6

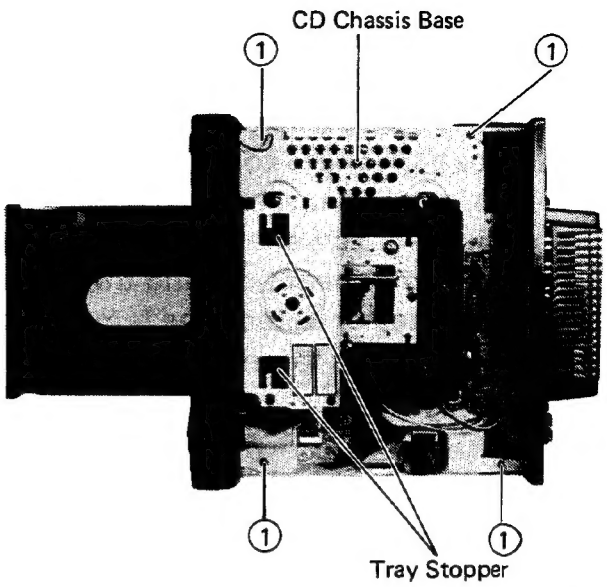


Fig. 1

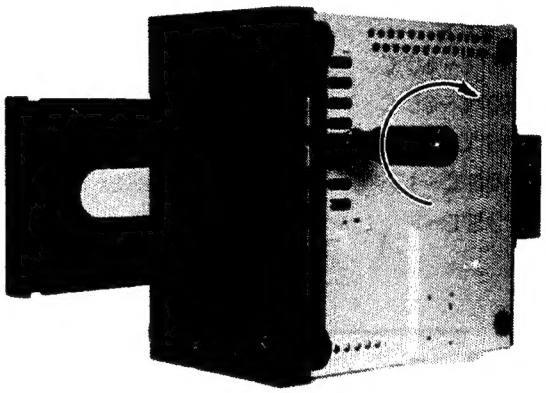


Fig. 2

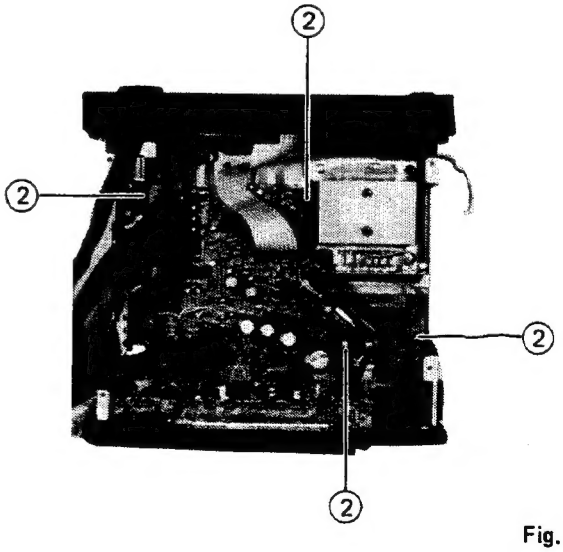


Fig. 3

(5) Removing the CD P.C. board

1. Remove the CD chassis base
3. Remove 4 screws ④.(Fig.5)

(6) Removing the Front panel

1. Remove the top cover.
2. Remove the tray Ass'y.
3. Remove the CD chassis base.
4. Remove 4 screws under the front panel.

*** Set the wire of power engine away from the power amplifier.**

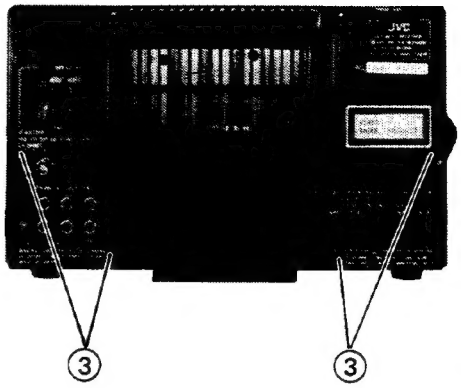


Fig. 4

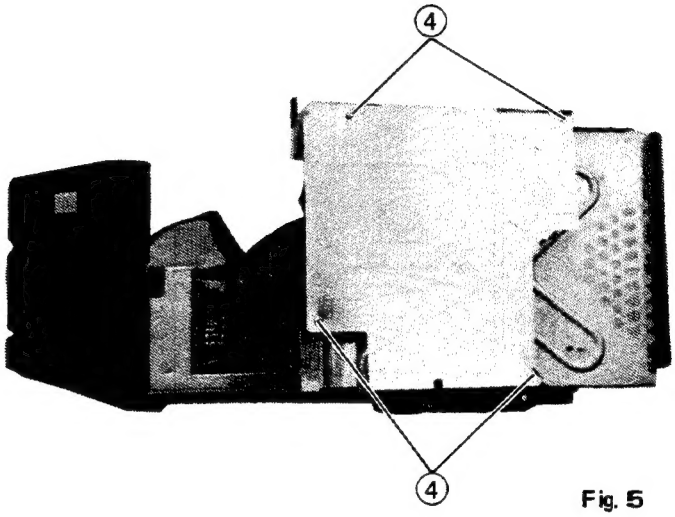


Fig. 5

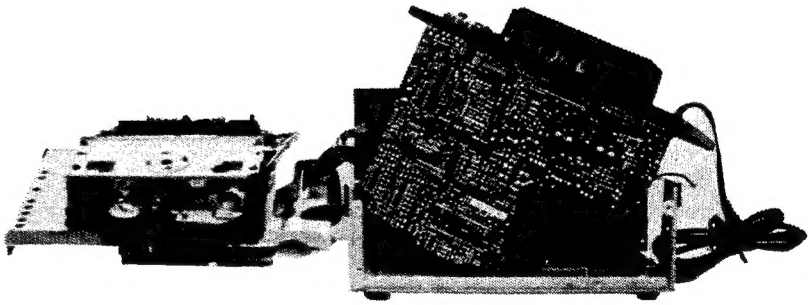
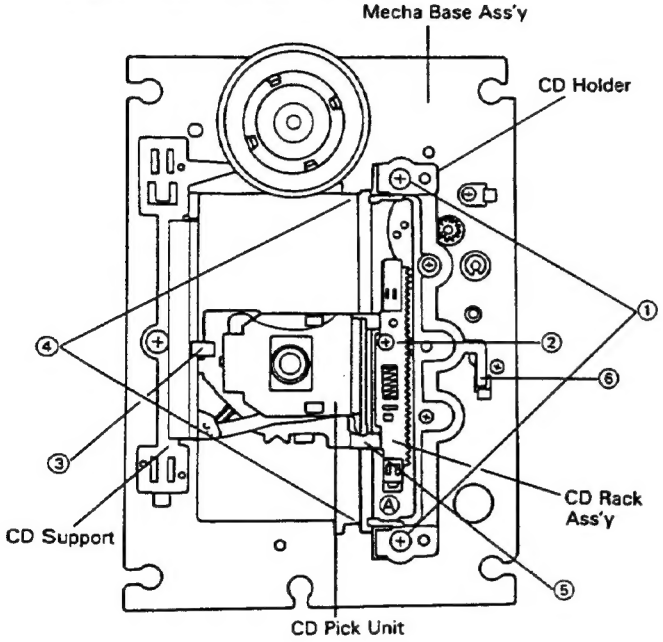


Fig. 6

(7) Laser pickup removal

1. Remove the top cover, tray assembly, cover and the clamper.
2. Move the Pickup Unit from rest position to the center pushing ⑤ point with finger.
3. Remove the screw ② from the CD RACK Ass'y.
4. Remove the CD RACK Ass'y.
5. Remove the screw ①from the mecha base Ass'y.
6. Remove the CD HOLDER fastening the shaft from the mechabase Ass'y. (Release the hook ⑥)
7. Remove the CD PICK UNIT with the shaft.

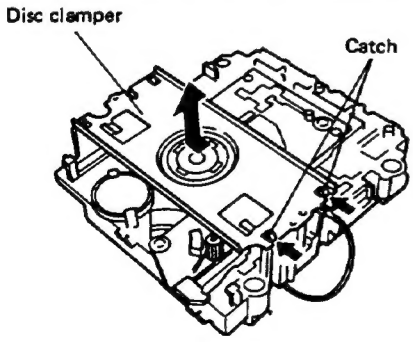


(8) Laser pickup installation

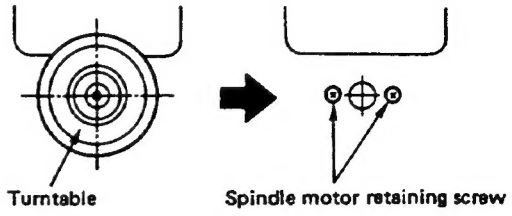
1. Connect two wires with the connectors of APC P.C. Board.
2. While installing the ③ in the CD SUPPORT, set the shaft on the base crook ④.
3. Install the CD HOLDER.
4. Install the CD RACK Ass'y in CD PICK UNIT.
   1) Install like inserting Ⓐat first.
   2) Fix screw ②.

(9) Removing the spindle motor

1. Remove a cover and release the catches holding the disc clamper to remove the disc clamper.



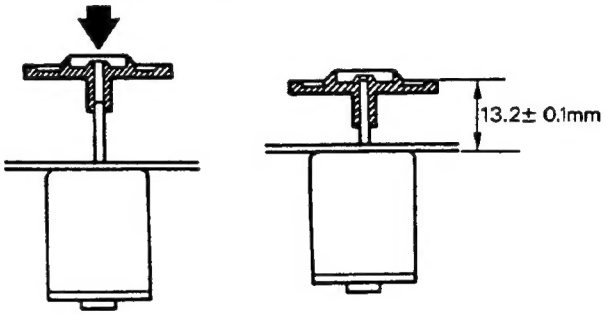
2. Remove the turntable, and remove the two screws retaining the spindle motor.



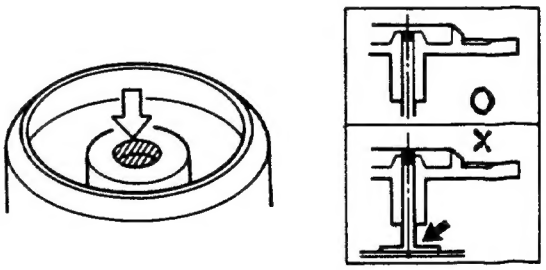
3. Remove the mechanism assembly as described above.
4. Remove the screw retaining the Spindle and Feed Motor P.C. Board and unsolder it.

(10) Spindle motor installation

1. Tighten the 2 screws to the same torque.
2. Solder the Spindle and Feed Motor P.C. Board.
3. Install the turntable. When installing, press straight down at the center of the turntable until the distance from the bottom of the mechanism base to the top of the turntable is exactly 13.2 ± 0.1mm.



3. After insertion is complete, bond the motor shaft and turntable together (at the section marked by an arrow in the figure on the left below).



Use "LOCKTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearings (the section marked by an arrow in the figure on the right).

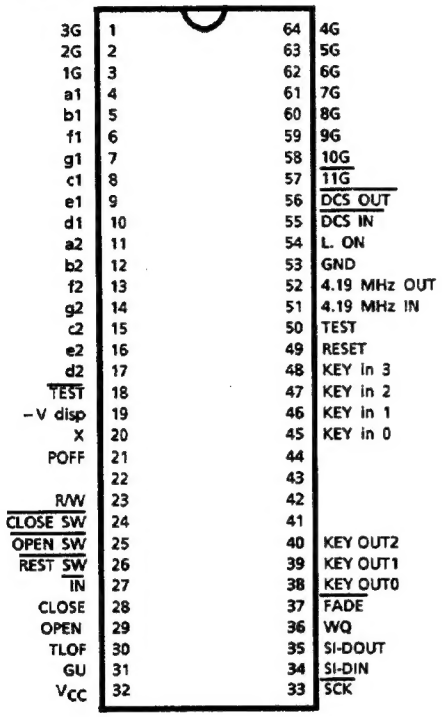
Internal Block Diagrams Of Other ICs

■ HD614081SB22 (IC951)·····CD Control Microcomputer

1. Outline:

This LSI is a C-MOS 4-bit singlechip microcomputer.
It consists of a 4096-words x 10-bits ROM, a 256-digits x 4-bits, I/O ports, timer/counter and serial interface. Its major functions are the acceptance of commands from swtiches and the output of commands to the FL display and servo control LSI, etc.

2. Terminal Layout

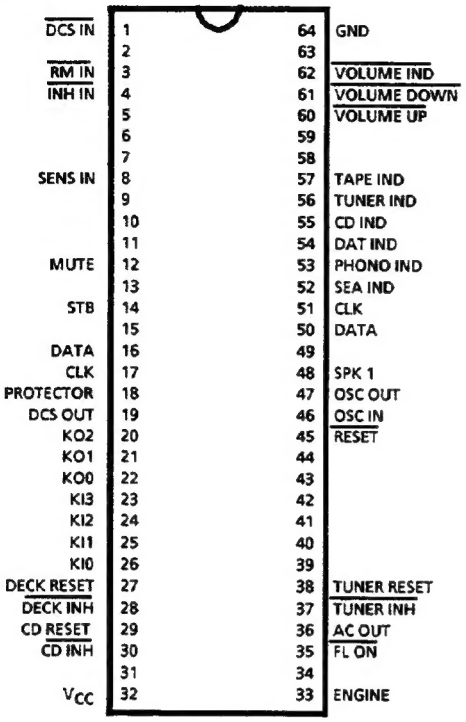


3. Pin Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1~3	3G~1G	O	FL grid control output.	33	SCK	O	Clock output to IC841.
4~17	a1~d2	O	FL segment control output.	34	SI-DIN	I	Serial data input from IC841.
18	TEST	I	Entering test mode with TEST (L).	35	SI-DOUT	O	Serial data output to IC841.
19	-V disp	—	Power supply for FL drive circuit.	36	WQ	I	Write request input from IC841.
20	X	O	FL segment control output.	37	FADE	O	FADE indicator signal output.
21	POFF	O	Power off signal output.	38~40	KO0~KO2	O	Key matrix output.
22			Not used.	41~44			Not used.
23	R/W	O	Read / Write signal output.	45~48	KI0~KI3	I	Key matrix input.
24	CL. SW	I	"L" with tray closed.	49	RESET	I	Reset signal input.
25	OP. SW	I	"L" with tray open.	50	TEST	I	Pull up.
26	REST SW	I	"L" with pickup at rest position.	51	4.19IN	I	Clock oscillation input.
27	IN	I	INH signal input.	52	4.19OUT	O	Clock oscillation output.
28	CLOSE	O	"H" with tray closed.	53	GND	—	GND.
29	OPEN	O	"H" with tray open.	54	L. OUT	O	Turns on laser.
30	TLOF	O	Turns off tracking servo.	55	DCS IN	I	DCS signal input.
31	GU	O	Increases tracking gain.	56	DCS OUT	O	DCS signal output.
32	Vcc	—	Power supply voltage (+5V).	57~64	11G~4G	O	FL grid control output.

■ µPD75106CW-168 (IC502)·····System Control Microcomputer

1. Terminal Layout



3. Pin Functions

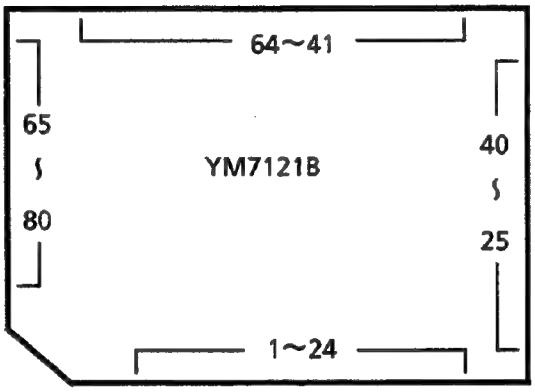
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	DCS IN	I	DCS signal input.	34			Not used.
2		I	Pull down.	35	FL ON	O	FL on/off control signal output.
3	RM IN	I	Remote controll signal input.	36	AC OUT	O	AC control signal output.
4	INH IN	I	INH signal input.	37	TUNER INH	O	INH signal output.
5~7		I	Pull down.	38	TU. RESET	O	Reset signal outpt.
8	SENS IN	I	Temperature detect signal input.	39~44			Not used.
9		I	Pull down.	45	RESET	I	Reset signal input.
10		I	Pull up.	46	OSC IN	I	Clock oscillation input.
11			Not used.	47	OSC OUT	O	Clock oscillation output.
12	MUTE	O	Mute signal output.	48	SPK 1	O	Speaker output control signal.
13			Not used.	49			Not used.
14	STB	O	STB signal output.	50	DATA	O	DATA signal output.
15		I	Pull down.	51	CLK	O	CLK signal output.
16	DATA	O	DATA signal output.	52	SEA IND	O	SEA indicator signal output.
17	CLK	O	CLK signal output.	53	PHONO IND	O	PHONO indicator signal output.
18	PROTECTOR	I	Protector detect signal input.	54	DAT IND	O	DAT indicator signal output.
19	DCS OUT	O	DCS signal output.	55	CD IND	O	CD indicator signal output.
20~22	KO2~KO0	O	Key matrix output.	56	TUNER IND	O	TUNER indicator signal output.
23~26	KI3~KI0	O	Key matrix input.	57	TAPE IND	O	TAPE indicator signal output.
27	DECK RESET	O	Reset signal output.	58-59			Not used.
28	DECK INH	O	INH signal output.	60	VOL. UP	O	Volume up signal output.
29	CD RESET	O	Reset signal output.	61	VOL. DOWN	O	Volume down signal output.
30	CD INH	O	INH signal output.	62	VOL. IND	O	Volume indicator signal output.
31			Not used.	63			Not used.
32	Vcc	—	Power supply voltage(+5V).	64	GND	—	GND.
33	ENGINE	O	Power engine drive output.				

■YM7121B(IC841)

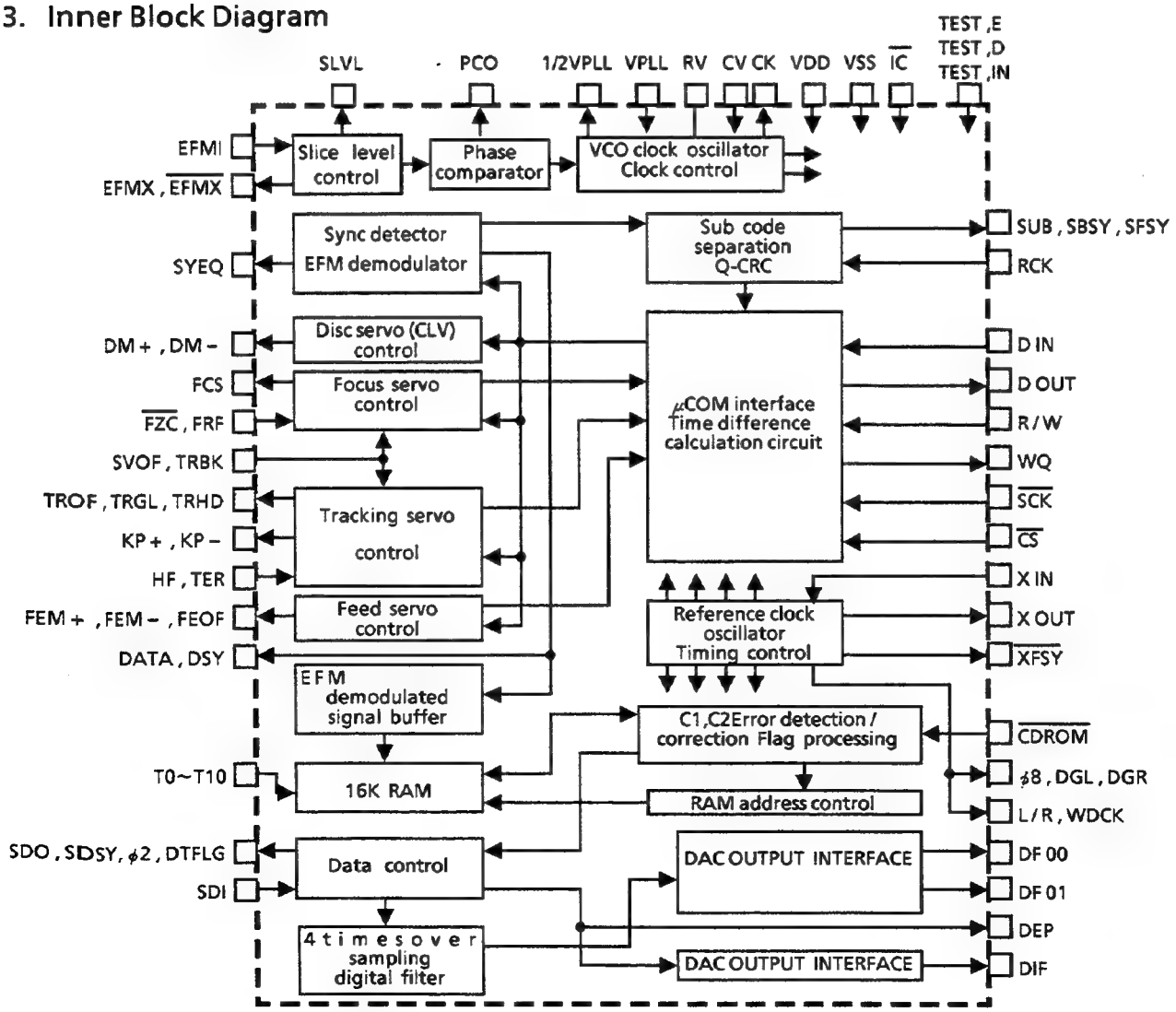
1. Outline

YM7121 is a C-MOS LSI for signal processing and servo control (SVC) in a CD player. It is used for the demodulation of the EFM signal from the laser pick up , detection / correction of the error signal , signal processing in digital filtering , etc. and for various servo controls (focusing , disc , tracking and feed servos).
And it contains digital interface which output the audio digital signals in S-RAM and CD-player. This digital interface matches EIAJ standards.

2. Top View



3. Inner Block Diagram



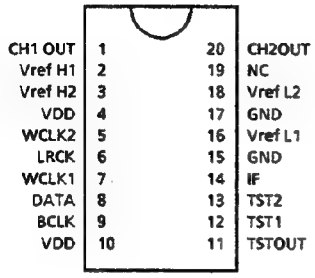
4. Terminal Function

Pin No.	Symbol	I/O	Function and Operation
1	CV	I	Adequate time constant is added to this terminal and input the PCO output. This makes the structure of clock reproduce circuit by inner VCO circuit.
2	RV	–	RV terminal is standard voltage terminal of inner VCO. And capacity for stabilizing is added to this terminal.
3 32 72	VDD	–	These are +5V power supply terminals.
4 5 70	TEST. IN TEST. E TEST. D	I I I	These terminals are for test.
6	SYEQ	O	This is the check output terminal, it becomes high when flame synchronizing signal detected from EFM pattern coincides frame synchronizing signal from internal counter.
7	DSY	O	DSY is synchronizing signal which becomes high when first signal of data output comes in. This terminal is the check terminal.
8	DATA	O	This terminal is for checks. The DATA is a serial signal of CK bit rate and it contains 8 bit EFM demodulation signal and 5 bit data control signal in 17 bit.
9	CK	O	CK has 4.3218 MHz clock.
10~19	T0~T9	I	This terminal is internal RAM test terminal, and connected GND.
22	DEP	O	De-emphasis is necessary when this terminal is high.
23	DIF	O	DIF is digital audio interface format output matched EIAJ standards.
24	SDO	O	SDO is a serial signal output of $\phi 2$ bit rate. (The MSB puts in at first.)
25	SDI	I	SDI is the input terminal of 4 times over sampling digital filter. It is usually connected with SDO.
26	SDSY	O	This terminal changes the Lch / Rch by LSB of the SDO.
27	DTFLG	O	Not used.
28	$\phi 2$	O	$\phi 2$ is 2.1168 MHz crystal clock.
29, 52, 77	VSS	–	GND
30	XOUT	O	Not used.
31	XIN	I	Input from crystal clock.
33 34 35 36 37 38 39 40 41 42 43 44 45	$\overline{\text{XFSY}}$ SUB SBSY RCK SFSY $\overline{\text{CDROM}}$ Φ8 WDCK L/R DGL DGR DF01 DF00	O O O I O O O O O O O O O	Not used.
46	$\overline{\text{SCK}}$	I	This terminal is connected to μCOM. It is an input terminal that carries the clock signal for data transfers.
47	R/W	I	This connects with microcomputer and it is an output terminal for switching data transmission mode - it enables to transmit data from SVC to microcomputer when R/M is "L" and from microcomputer to SVC when R/W is "H".
48	$\overline{\text{CS}}$	I	This is a chip select terminal for YM7121.
49	DOUT	O	This terminal is the data output terminal connected to μCOM. When R/W is low, data is transferred from YM7121 to μCOM, according to theSCK clock input.

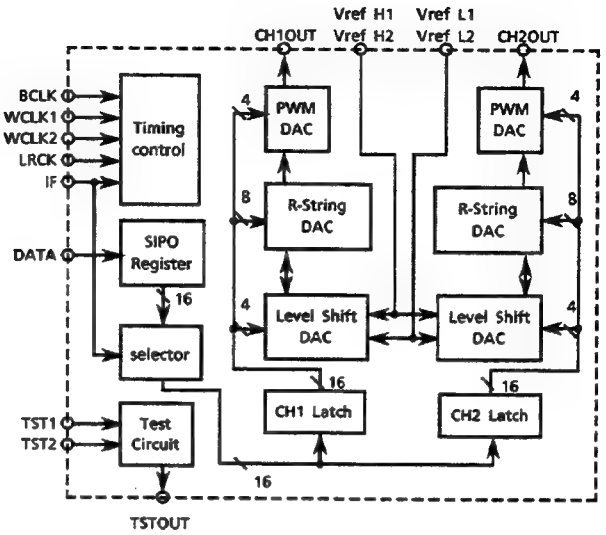
Pin No.	Symbol	I/O	Function and Operation
50	WQ	O	This terminal is connected to μCOM. It is a request signal which demands to μCOM inputting the data transfer (YM7121 to μCOM).
51	DIN	I	This is a data input terminal connected to μCOM. When R/W is high, the data is transferred from μCOM to YM7121 according to the SCK clock input.
53 54	DM+ DM−	O O	These terminals output the PWM to control the speed of spindle motor. The speed of the motor goes up when DM+ is high, and slows down when DM− is high: both terminals can not become high simultaneously.
55 56 60 61 62 63 64	HF TER TRHD TRGL TROF KP− KP+	I I O O O O O	When tracks are being crossed during serches, the amplitude variation of the generated HF signal is sampled at the zero − cross point of the tracking error signal TER and the TROF signal is output. The level variations of this signal turn the servo on and off, greatly facilitaing track acquisition. KP+ or KP− is output to conduct tracking, and TRHD is output during tracking to cause generation of the tracking error signal. The TRGL signal is for increasing the tracking gain after tracking is completed.
57 58 59	FEM+ FEM− FEOF	O O O	The FEM+ and FEM− are output as high speed feed signals, and FEOF signal is output for cutting the feed servo during high speed feed.
65	TRBK	I	TRBK is input to apply tracking brake from outside. TRGL becomes low with high input and inner control signal TBKE becomes high.
66	SVOF	I	When the signal inputs to SVOF, tracking and feed servo set to OFF. TROF and FEOF become "H" with high input, and TRHD, KP+, KP− become low.
67 58 59	$\overline{FZC}$ FCS FRF	I O I	These terminals are used for controlling the focus servo. The FCS is for a leading signal of Focusing; the signal, generated when the focus point is achieved, terminate the focusing operation; and FCO flag is dropped internally by FRF signal generated when reflected light is detected.
71	$\overline{IC}$	I	YM7121 needs initializing when power supply turn on. IC will be low more than 400μs since XIN is input clock with VDD standard.
73 74 75	SLVL EFMX $\overline{EFMX}$	O O O	Amplitude limited, mutually anti-phased signals are output from EFMX and $\overline{EMFX}$. Slice level is controlled by these signals and external amplifier. SLVL is output amplitude alteration component of both terminals. When integral circuit is connected to external. YM7121 easily can control slice level.
76	EFMI	I	This terminal is input EFM signal. (1~2 Vpp)
78	PCO	O	This terminal outputs the phase difference when the polarity of the clock and the EFM pattern changes.
79	VPLL	I	This terminal is input D.C. voltage matched VCO free run frequency. (17.2872 MHz)
80	1/2 VPLL	O	This terminal outputs a half of VPLL input, and capacity for stabilizing is added to this terminal.

■ LC7881-C (IC873) ····· D/A converter

1. Terminal Layout



2. Block Diagram

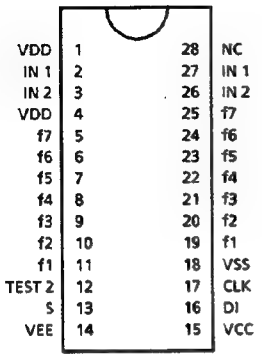


3. Pin Functions

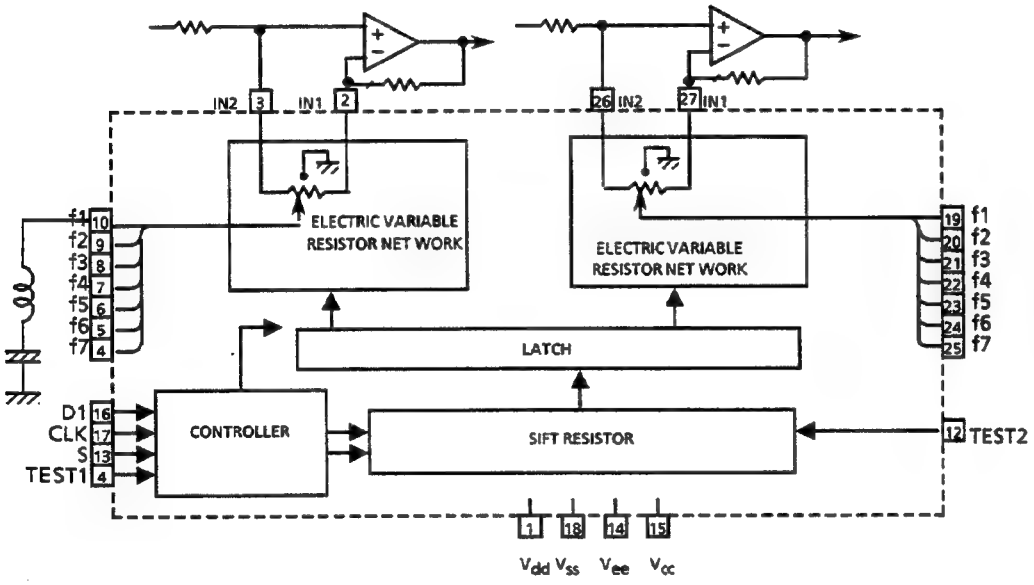
Pin No	Symbol	I/O	Functions and Operations
1	CH1 OUT	O	Channel 1 Output pin.
2	Vref H1	I	Reference voltage "H" input pin1.
3	Vref H2	I	Reference voltage "H" input pin2.
4	V_{DD}	—	Power supply, +5V.
5	WCLK2	I	Word clock 2 input pin. When IF pin is at high level, WCLK2 pin should be set at low level. When IF pin is at low level, this generates the internal signal used to latch the CH1 data of the digital audio signal, using the falling edge of WCLK2.
6	LRCK	I	LR clock input pin. This shows the CH1 and CH2 of the input digital audio data. When LRCK is at high level, it corresponds to CH1 data. When LRCK is at low level, it corresponds to CH2 data.
7	WCLK1	I	Word clock 1 input pin. When IF pin is at high level, this pin generates the internal signal used to latch both the CH1 and CH2 data, using the falling edge of WCLK1. When IF pin is at low level, it generates the internal signal used to latch the CH2 data.
8	DATA	I	Digital audio data input pin. When IF pin is at high level, the data signal is input by each bit serially from the MSB. When IF pin is at low level, the data signal is input by each bit serially from the LSB.
9	BCLK	I	Bit clock pin. This clock signal is used when reading the digital audio data by each bit serially, and also used for PWM D/A converter.
10	V_{DD}	—	Power supply, +5V.
11	TST OUT	O	Test signal output pin. Normally leave this pin open.
12 13	TST1 TST2	I	Test signal input pin. Normally connect to GND terminal.
14	IF	I	Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first.
15	GND	—	Ground.
16	Vref L1	I	Reference voltage "L" input pin1.
17	GND	—	Ground.
18	Vref L2	I	Reference voltage "L" input pin2.
19	NC	—	No connection.
20	CH2 OUT	O	Channel 2 output pin.

■ LC7522(IC651) ·····; Variable Resistor for SEA Control

1. Terminal Layout



2. Block Diagram

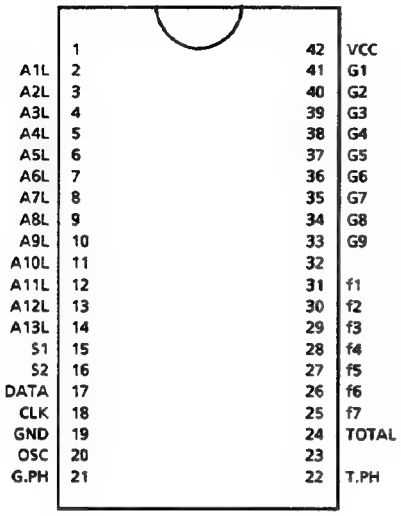


3. Pin Functions

Pin No.	Pin Name	Functions
1 18 14 15	V_{DD} V_{SS} V_{EE} V_{CC}	Power supply +7V for audio signal Ground. Power supply −7V for audio signal. Power supply +5V
2,27 3, 26	IN 1 IN 2	Audio signal input The inversion signal of the operational amplifier inputs to IN 1 normally. The non-inversion signal of the operational amplifier inputs to IN 2 normally.
16	DI	Data input from the CPU. Schmitt inverter type
17	CLK	Clock signal input from the CPU. Schmitt inverter type
4~10 19~25	f1~f7	For connect to band-pass filter. f1~f7x2 (Left and Right)
11 12	TEST 1 TEST 2	Not use Not use
13	S	Chip Select
28	NC	Not use

■ LC7565(IC901) ···;····· FL Driver

1. Top View

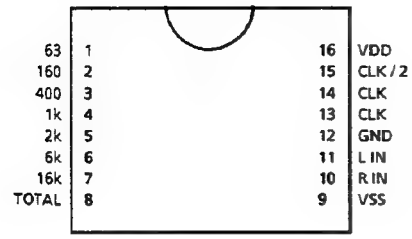


2. Terminal Function

Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1		—	Connected to ground.	22	T.PH	O	Peak hold of total display; Decision of reset time with connecting resistor and capacitor.
2	A1L	O	FL anode drive output.	23		—	Connected to ground.
3	A2L	O	FL anode drive output.	24	TOTAL	I	Input terminal of rectified voltage signal.
4	A3L	O	FL anode drive output.	25	f7	I	Input terminal of rectified voltage signal.
5	A4L	O	FL anode drive output.	26	f6	I	Input terminal of rectified voltage signal.
6	A5L	O	FL anode drive output.	27	f5	I	Input terminal of rectified voltage signal.
7	A6L	O	FL anode drive output.	28	f4	I	Input terminal of rectified voltage signal.
8	A7L	O	FL anode drive output.	29	f3	I	Input terminal of rectified voltage signal.
9	A8L	O	FL anode drive output.	30	f2	I	Input terminal of rectified voltage signal.
10	A9L	O	FL anode drive output.	31	f1	I	Input terminal of rectified voltage signal.
11	A10L	O	FL anode drive output.	32		—	Connected to ground.
12	A11L	O	FL anode drive output.	33	G9	O	Grid drive output.
13	A12L	O	FL anode drive output.	34	G8	O	Grid drive output.
14	A13L	O	FL anode drive output.	35	G7	O	Grid drive output.
15	S1	I	Chip selector.	36	G6	O	Grid drive output.
16	S2	I	Chip selector.	37	G5	O	Grid drive output.
17	DATA	I	Data input from IC804..	38	G4	O	Grid drive output.
18	CLK	I	Clock input from IC804.	39	G3	O	Grid drive output.
19	GND	—	Ground.	40	G2	O	Grid drive output.
20	OSC	—	Oscillator with connecting resistor and capacitor.	41	G1	O	Grid drive output.
21	G.PH	O	Peak hold for graphic equalizer display ;Decision of reset time with connecting resistor and capacitor.	42	VDD	—	Power supply (+5V).

■ XR1091(IC903)····· Band-pass Filter

1. Top View



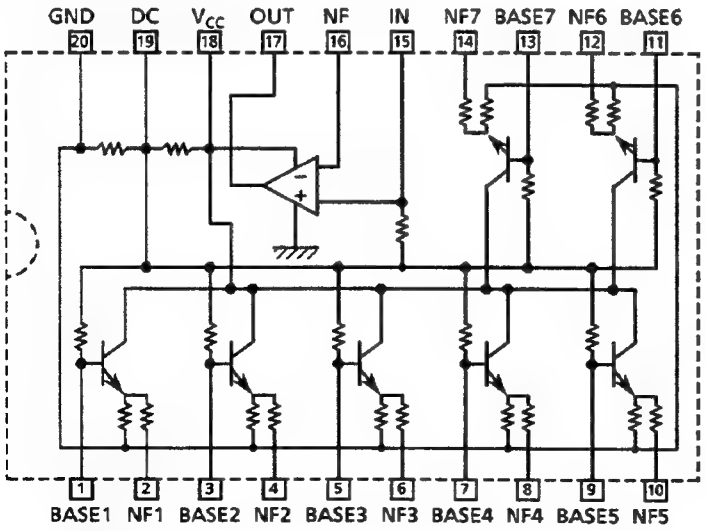
2. Terminal Function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	63	O	Peak hold output of 63Hz band-pass filter.	9	VSS	—	Power supply (-6V).
2	160	O	Peak hold output of 160Hz band-pass filter.	10	R IN	I	Right channel input.
3	400	O	Peak hold output of 400Hz band-pass filter.	11	L IN	I	Left channel input : Connecting to ground.
4	1K	O	Peak hold output of 1kHz band-pass filter.	12	GND	—	Ground terminal.
5	2K	O	Peak hold output of 2kHz band-pass filter.	13	CLK	—	Connecting capacitor for clock.
6	6K	O	Peak hold output of 6kHz band-pass filter.	14	CLK		Connecting resistor to pin 13 for clock.
7	16K	O	Peak hold output of 16Hz band-pass filter.	15	CLK/2	O	1/2 clock output.
8	TOTAL	O	Total frequency output (peak hold).	16	VDD	—	Power supply (+ 6V).

■ LA3607S (IC653、IC654) : S.E.A. GRAPHIC EQUALIZER

1. Functions

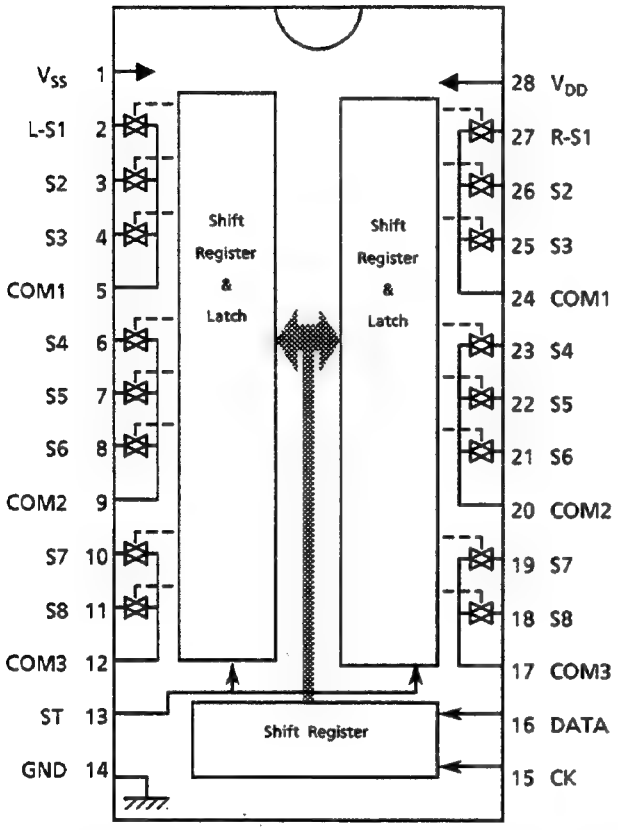
It makes inductive characteristic instead of coil.



■TC9163N (IC590) : Analog Switch

1. Functions
   These analog switches are controlled by 14 bit serial date from computer for selecting the source.

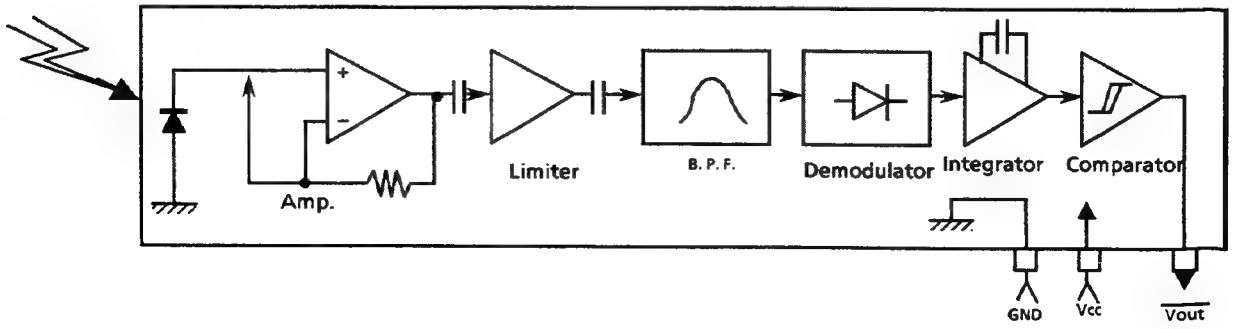
2. Terminal Layout & Block diagram



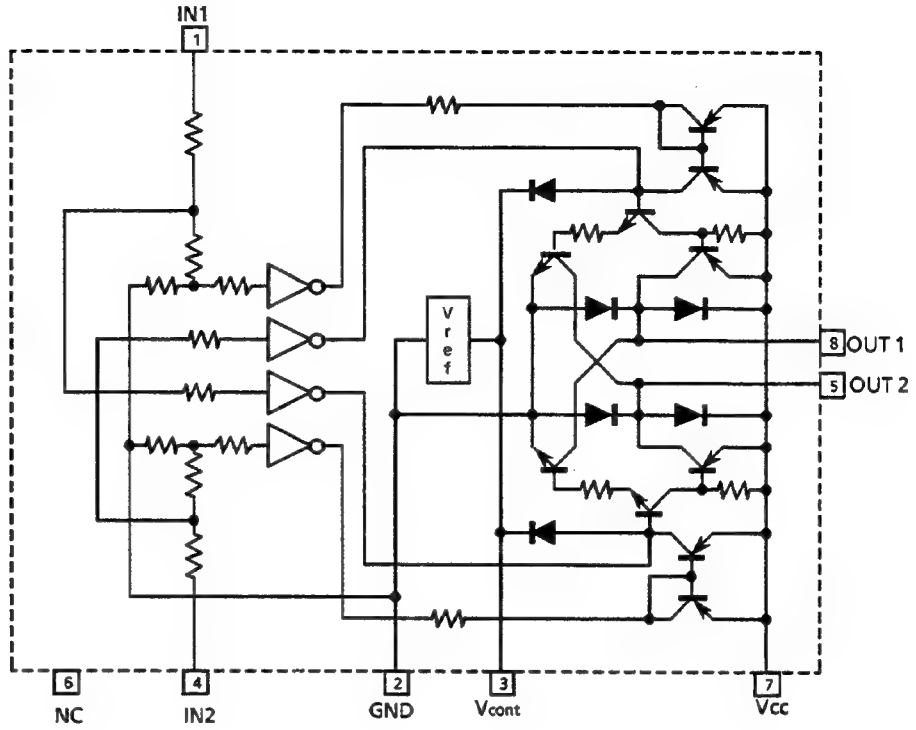
3. First 10bits are used to source select. Last 4 bits are chip select. The switches (S1~S8) are connected to common terminals (COM1~COM3) according to the DATA from computer.

	Switch Select bit								CH1 (L-S1~S8)	CH2 (R-S1~S8)	Chip Select bit			
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14
TC9163N	The switch is ON when the data is "1".										1	0	0	0

■GP1U501X (IC902) : Receiver for remote controller



■ LB1639-CV (IC633) ; Motor Driver



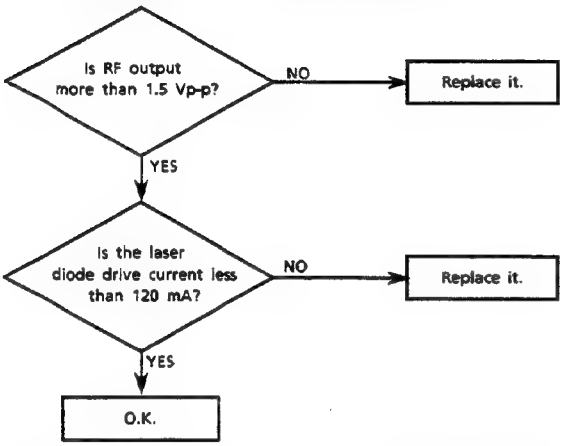
IN 1	IN 2	OUT 1	OUT 2	MOTOR
H	L	H	L	CLOCKWISE
L	H	L	H	COUNTER-CLOCKWISE
H	H	OFF	OFF	WAITING
L	L	OFF	OFF	WAITING

Maintenance of Laser Pickup

(1) Life of the laser diode

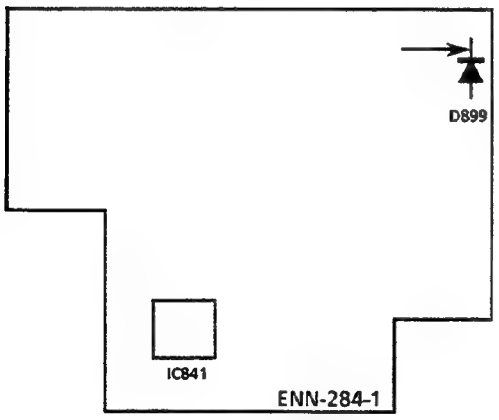
When the life of the laser diode has expired, the following symptoms will appear.

1. The level of RF output (EFM output: amplitude of eye pattern) will be low.
2. The drive current required by the laser diode will be increased.
   In such a case, check the life of the laser diode following the flowchart below



(2) Measurement of laser diode drive current

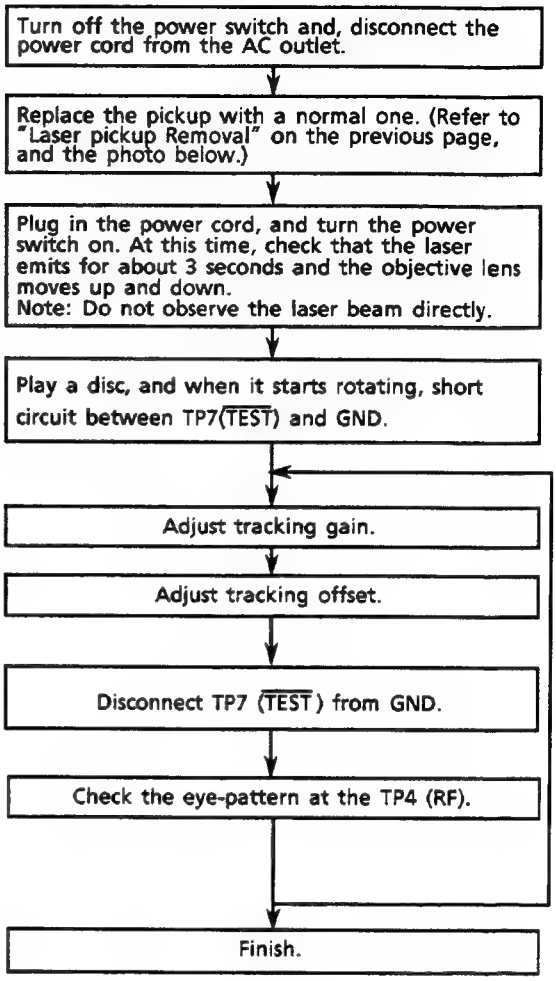
Replace the cathode(D899) shown below with the resistor (1Ω).
Measure the voltage across the resistor with a milli-voltmeter. When the voltage is more than 120mV, it shows that the life of the laser diode has expired



(3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.
If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup

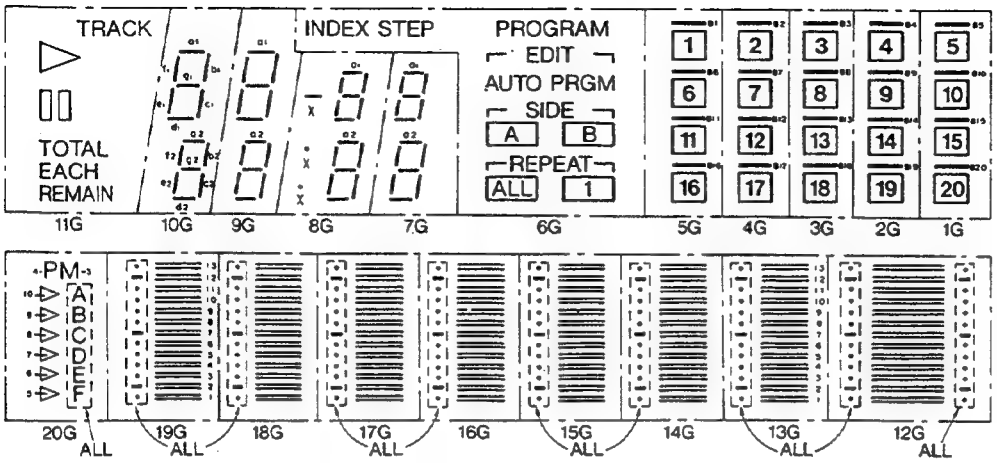


Note: Since one adjustment may affect other settings, repeat these adjustments a few times.

Internal Connections for the Display Tube

■ FL901 : ELU0001-102

(1) Grid Layout



(2) Pin Connections

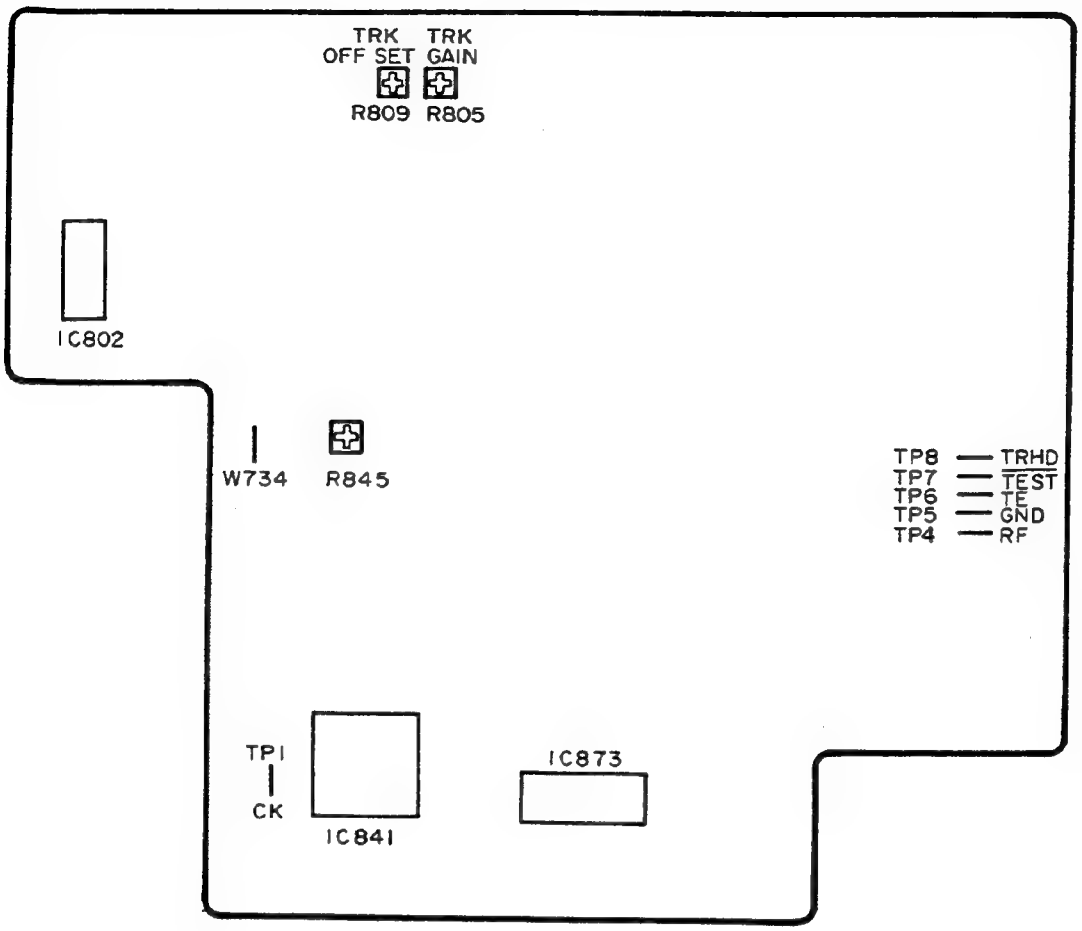
PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CONNECTION	F1	F1	NP	19G	18G	17G	16G	15G	14G	13G	12G	20G	PALL	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	PX	11G	10G	9G

PIN NO.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
CONNECTION	8G	7G	6G	5G	4G	3G	2G	1G	Pa1	Pb1	Pf1	Pg1	Pc1	Pe1	Pd1	Pa2	Pb2	Pf2	Pg2	Pc2	Pe2	Pd2	NP	F2	F2

(3) Terminal Connections

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
a1	—	a1	a1	a1	a1	—	—	—	—	—	—
b1	—	b1	b1	b1	b1	—	—	—	—	—	—
c1	▮▮	c1	c1	c1	c1	PROGRAM	1	2	3	4	5
d1	TOTAL	d1	d1	d1	d1	AUTO	6の□	7の□	8の□	9の□	10の□
e1	—	e1	e1	e1	e1	EDIT	B6	B7	B8	B9	B10
f1	TRACK	f1	f1	f1	f1	INDEX	B1	B2	B3	B4	B5
g1	▶	g1	g1	g1	g1	STEP	1の□	2の□	3の□	4の□	5の□
a2	EACH	a2	a2	a2	a2	PRGM	6	7	8	9	10
b2	REMAIN	b2	b2	b2	b2	SIDE	B11	B12	B13	B14	B15
c2	—	c2	c2	c2	c2	REPEAT	B16	B17	B18	B19	B20
d2	—	d2	d2	d2	d2	1	16	17	18	19	20
e2	—	e2	e2	e2	e2	ALL	16の□	17の□	18の□	19の□	20の□
f2	—	f2	f2	f2	f2	A	11の□	12の□	13の□	14の□	15の□
g2	—	g2	g2	g2	g2	B	11	12	13	14	15
x	—	—	—	:,—	—	—	—	—	—	—	—

Adjustment Procedures (CD)



(1) PLL free-running adjustment

a. Measuring instrument
Frequency counter
b. Adjusting procedure
1. Connect a frequency counter with TP1 (CK) and W734(GND) on the main PC board..
2. Adjust R845 for setting the frequency counter's value becomes 4.310±0.002MHz.(On the STOP MODE)

(2) Tracking gain adjustment

a. Measuring instruments
Oscilloscope, Normal disc
b. Adjusting procedure
1. Connect an oscilloscope with TP6 (TE) and TP5(GND) on the main PC board.
2. Play the disc.
3. Short circuit TP7 (TEST) to TP5 (GND).
4. Adjust R805 for setting tracking error signal becomes 2.0 V_{P-P}.

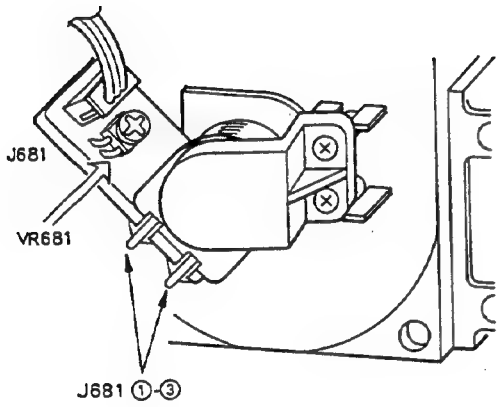
(3) Tracking offset adjustment

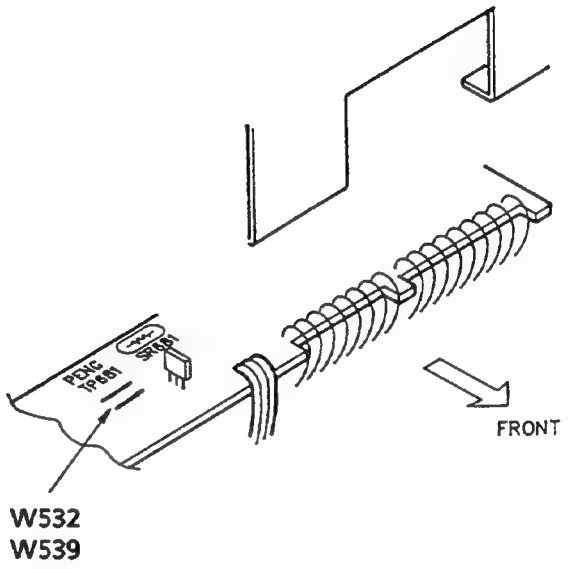
a. Measuring instruments
Oscilloscope, Normal disc
b. Adjusting procedure
1. Connect an oscilloscope with TP6 (TE) and TP5 (GND) on the main PC board.
2. Play the disc.
3. Short circuit TP7 (TEST) to TP5 (GND).
4. Adjust R809 for setting the DC level of the tracking error (off set) becomes 0.

Note: Adjust R809 for setting the waveform becomes symmetrical around the 0 level.

Adjusting Procedures(Power Engine)

1. Connect the resistor(560Ω)with W532 and W539.(The Power Engine operates with about 16Hz frequency.)
2. Connect an osciloscope with pin1 and pin3 of J681.
3. Adjust VR681 to obtain 7.5 ± 0.5V on the digital-multimeter.(21.2 ± 1.4Vp-p on the oscilloscope)

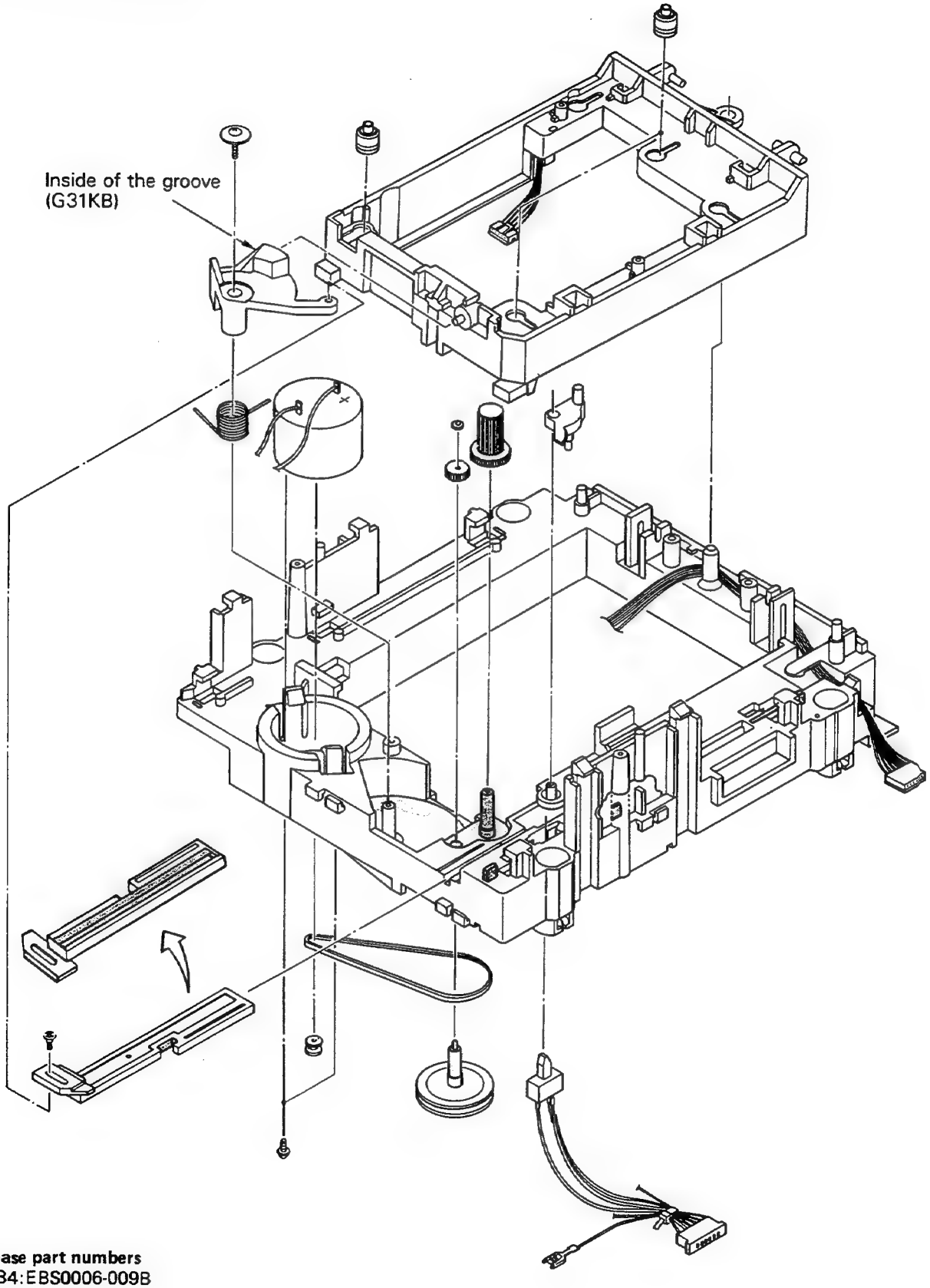




W532
W539

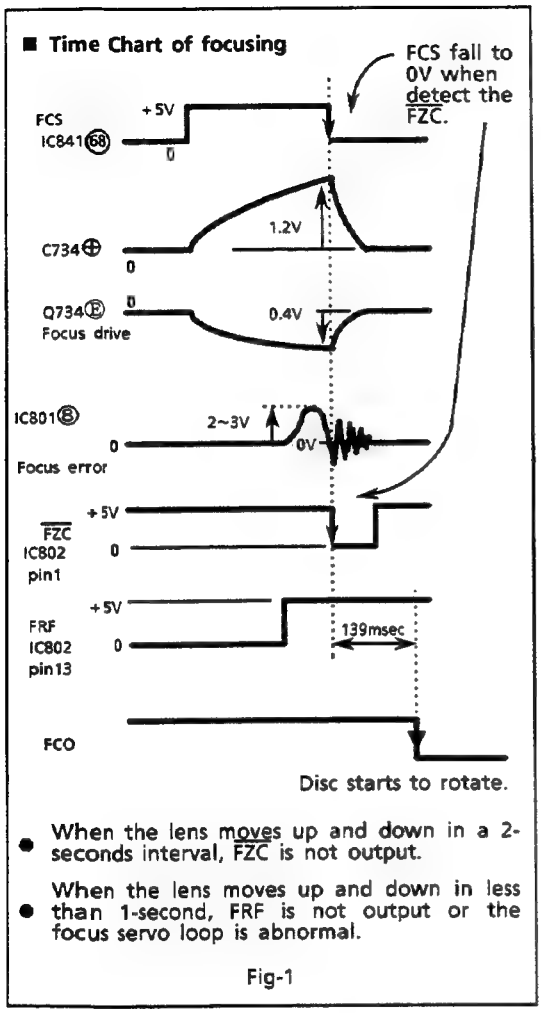
Application Points for Grease

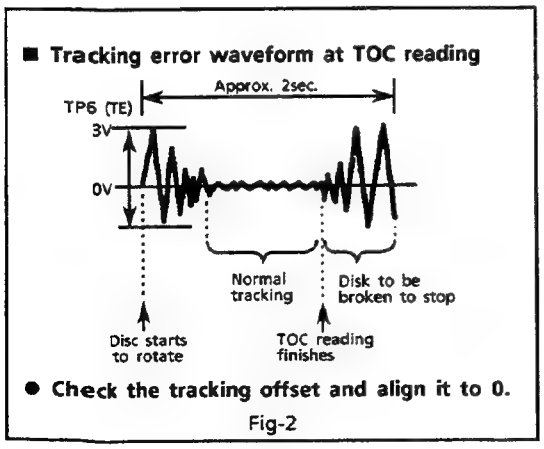
Grease used
G334(Shin-etsu Kagaku,Inc.)
G31KB(Kanto Kasai,Inc.)

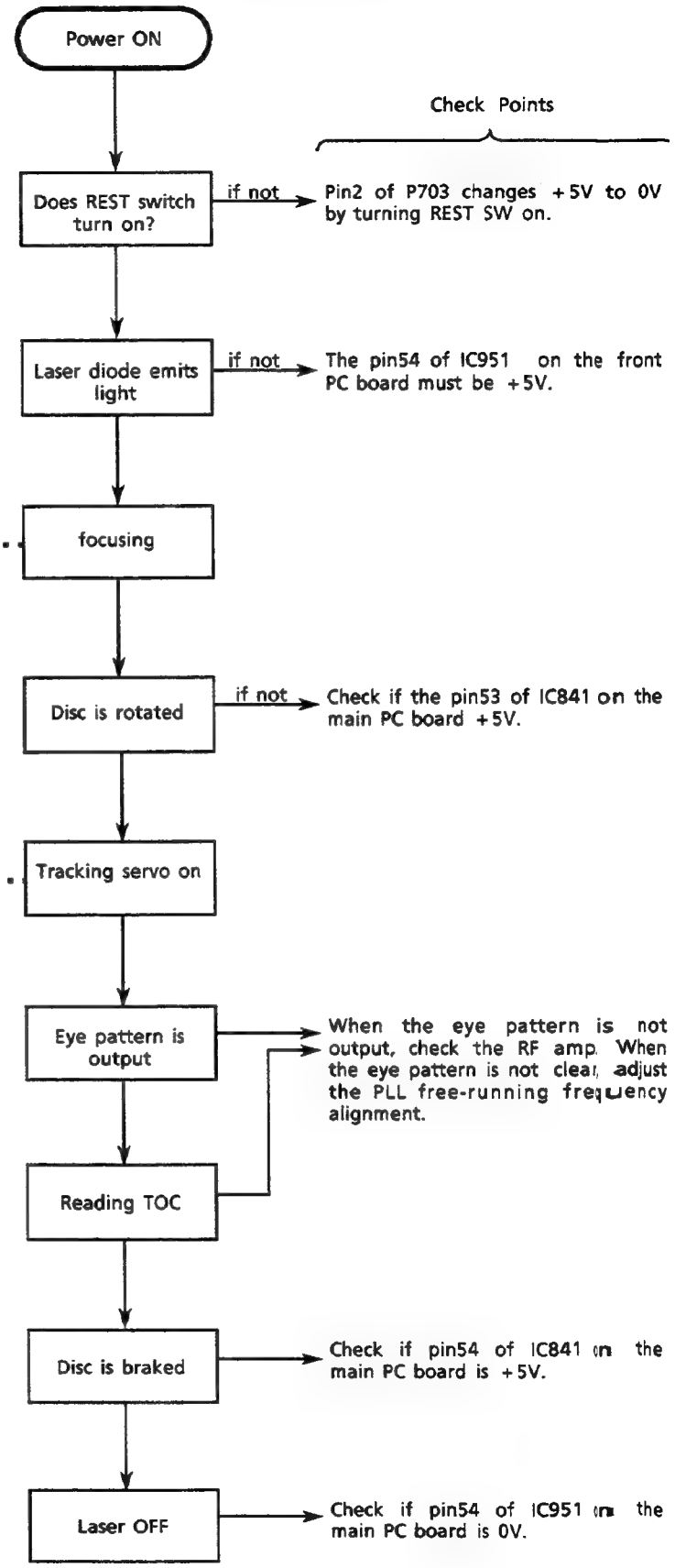


Grease part numbers
G334:EBS0006-009B
G31KB:EBS0006-013B

Flow of Functional Operation Until TOC is Read

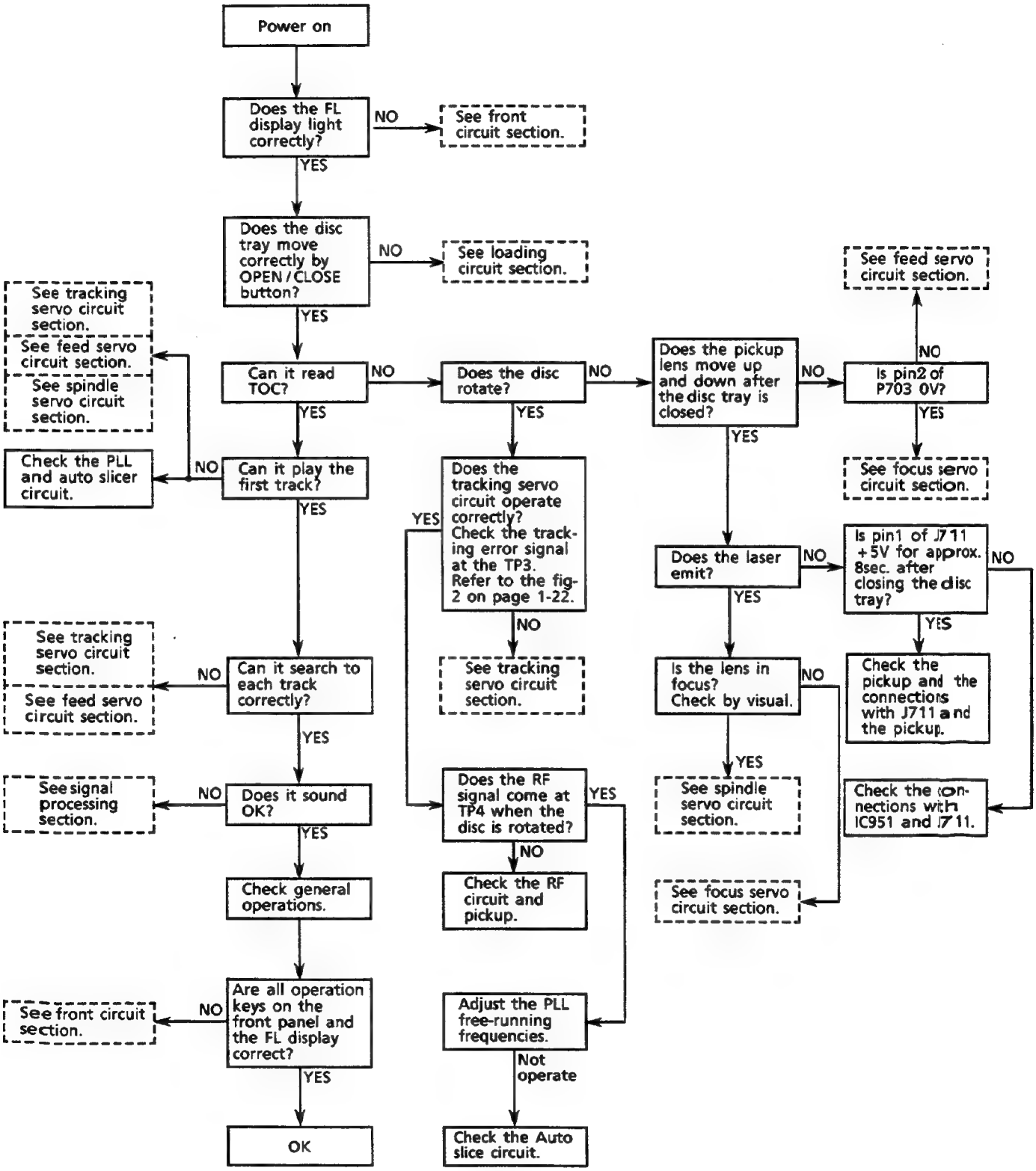




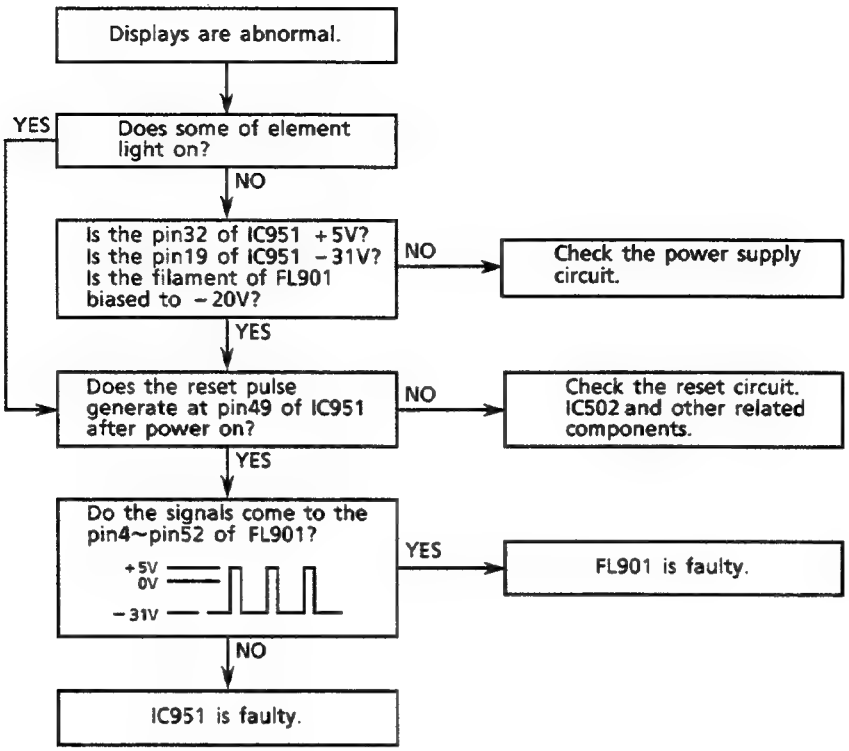


Troubleshooting

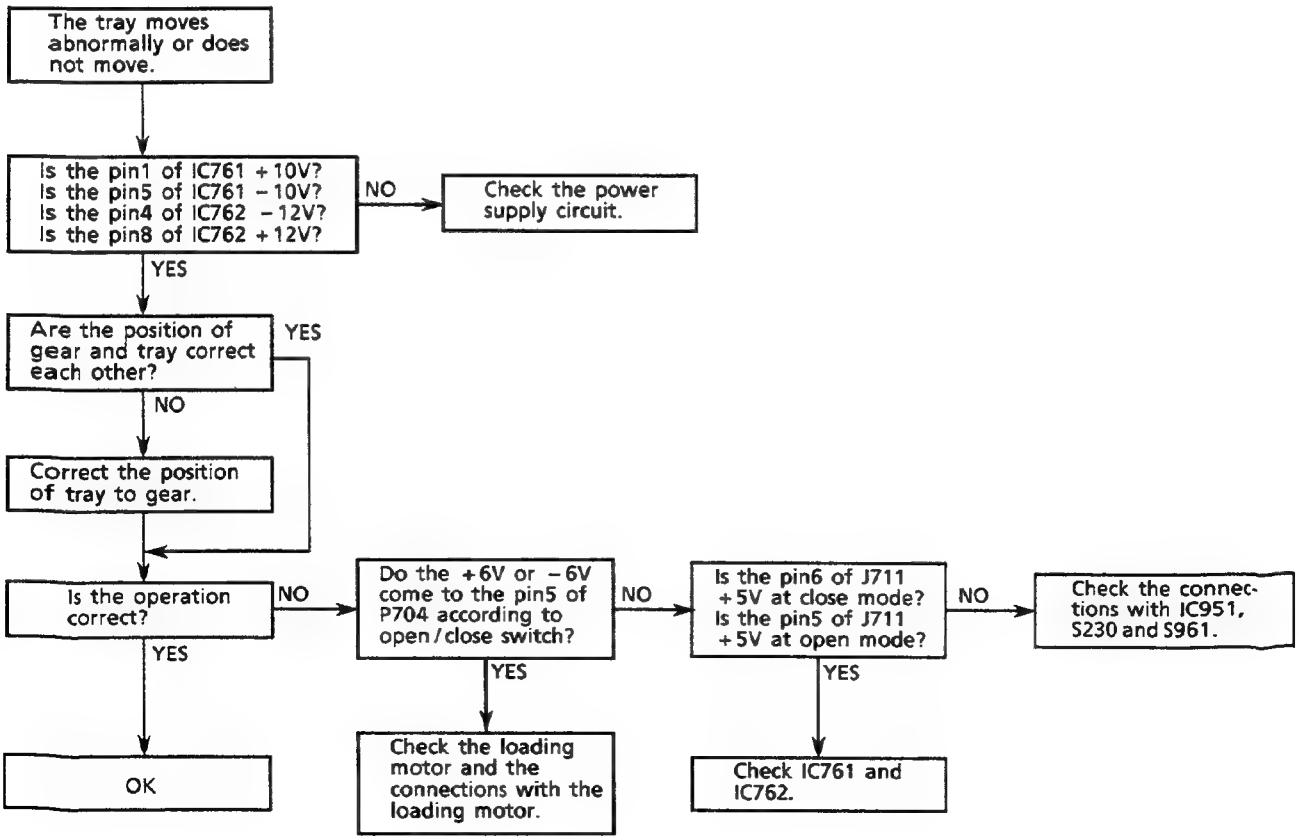
The following flowchart shows each circuit's condition about from "power on" until "ready to play".



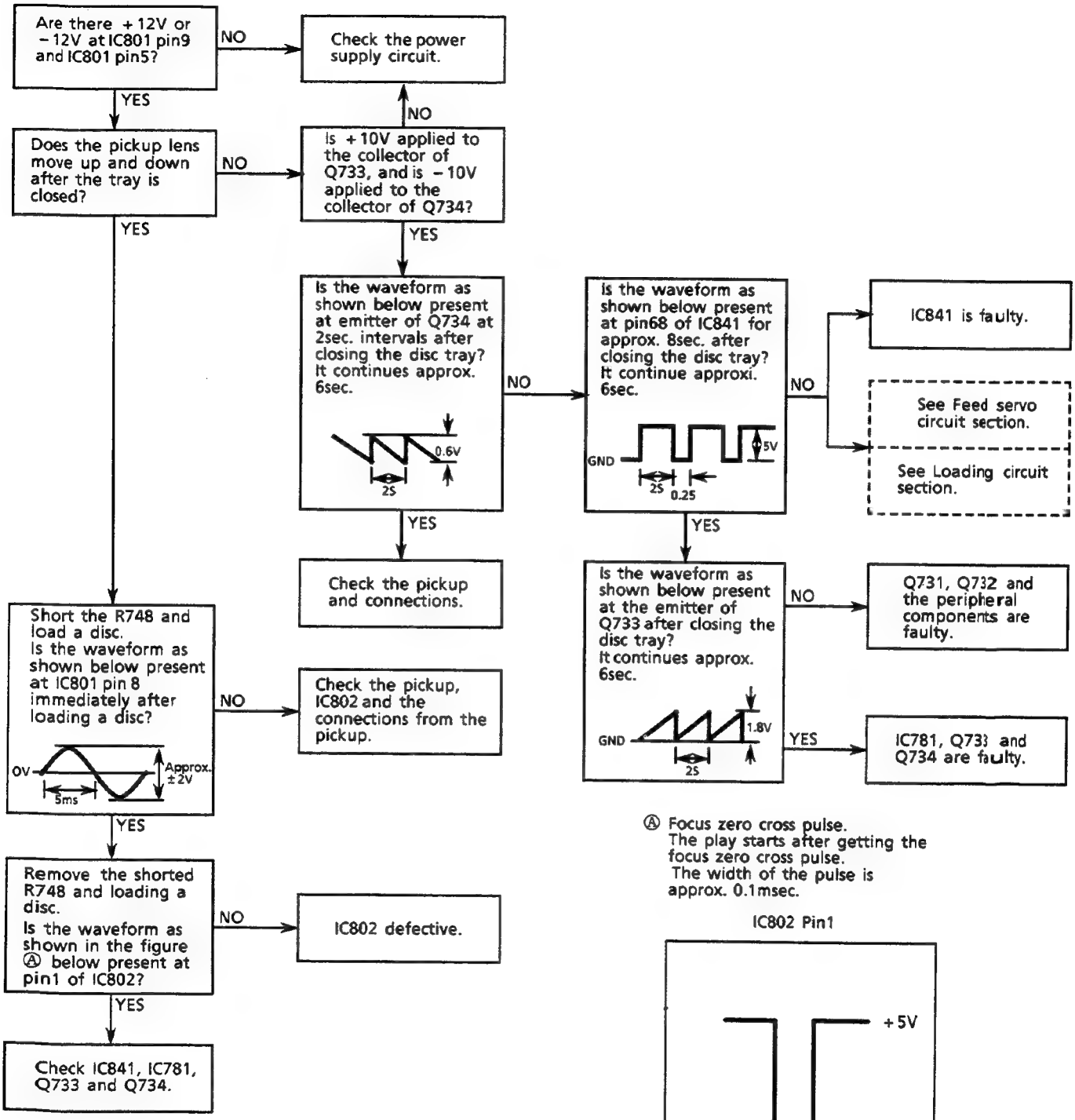
Front circuit Section



Loading circuit section



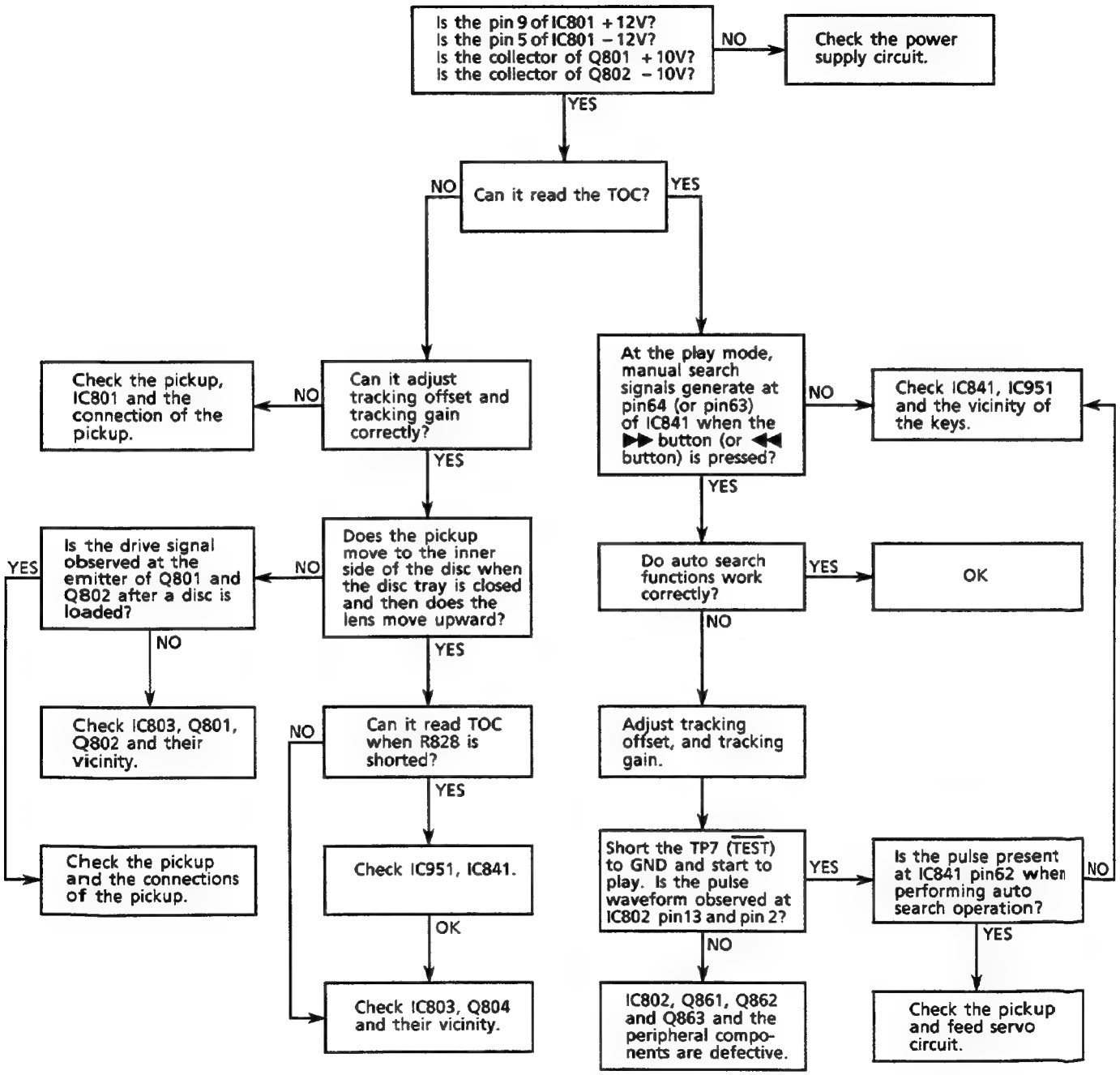
Focus servo circuit section



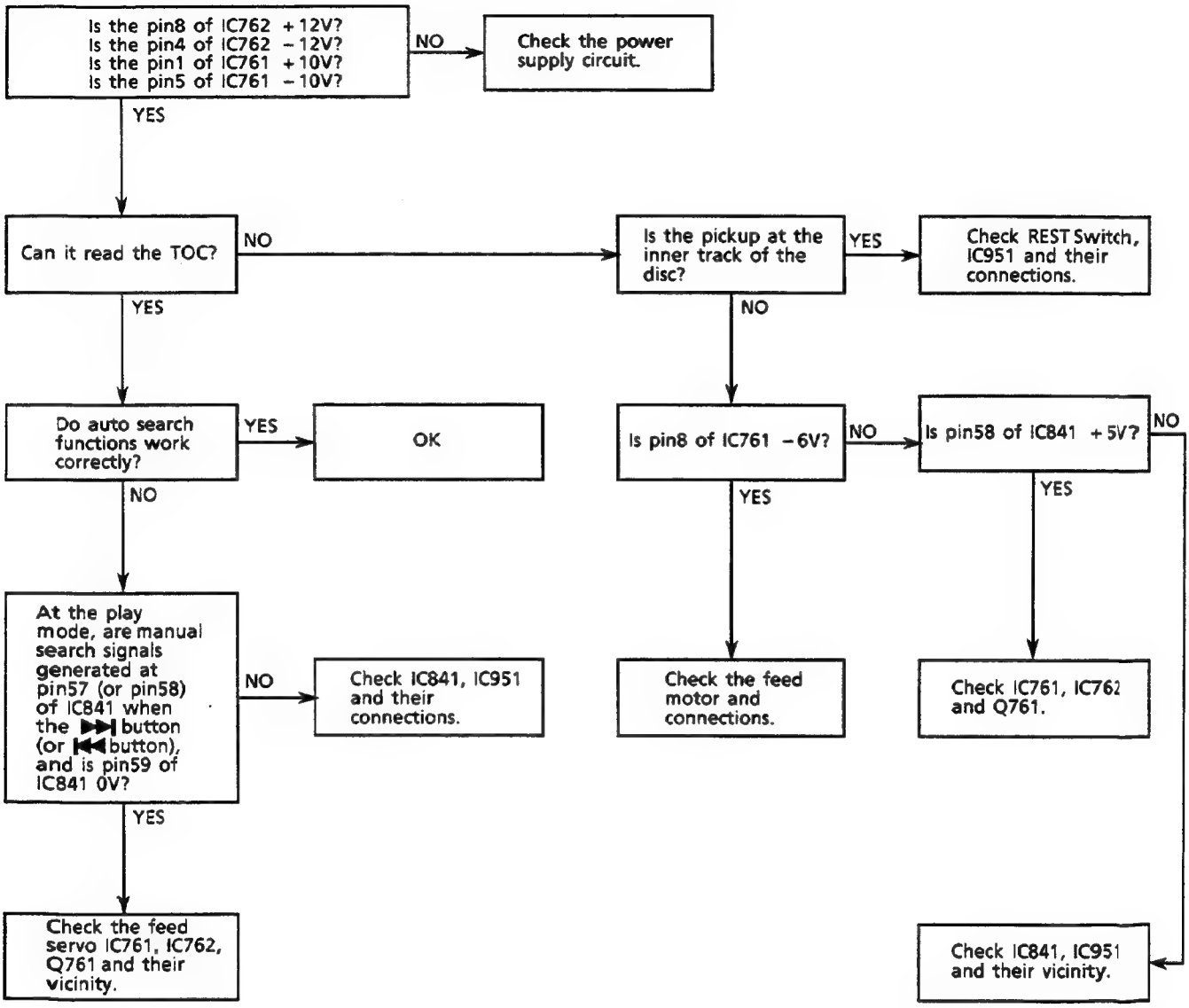
Ⓐ Focus zero cross pulse.
The play starts after getting the focus zero cross pulse.
The width of the pulse is approx. 0.1msec.

IC802 Pin1

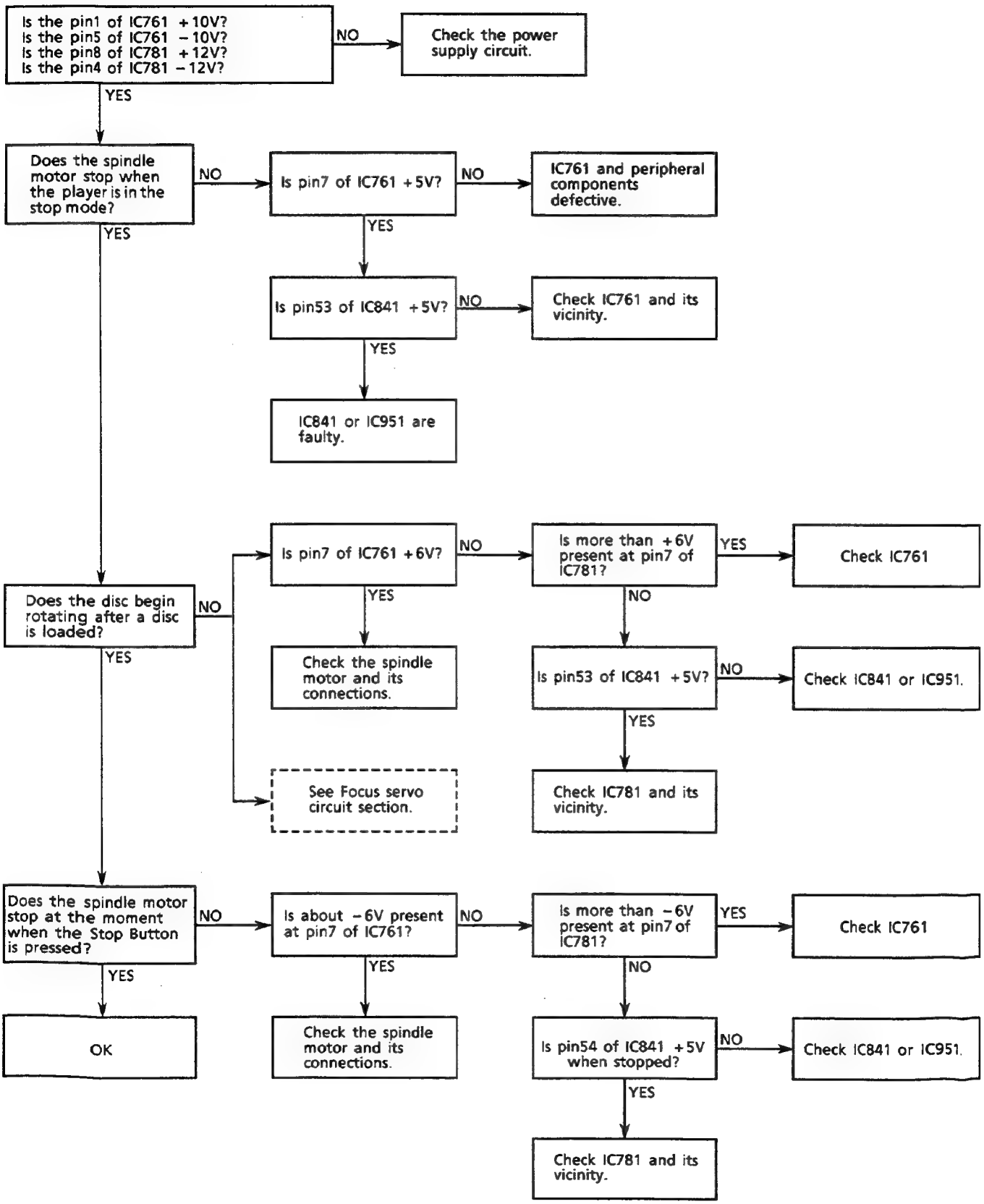
Tracking servo circuit section



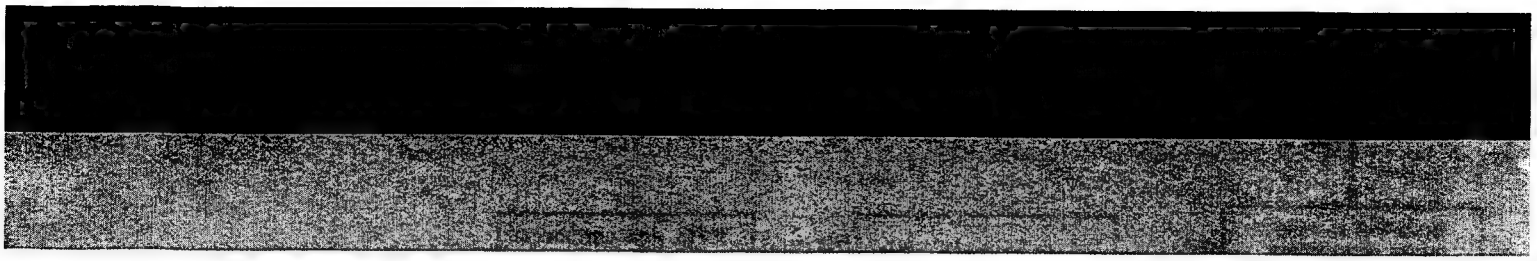
Feed servo circuit section



Spindle servo circuit section



AX-MX50BK



JVC

VICTOR COMPANY OF JAPAN, LIMITED
AUDIO PRODUCTS DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN

(NO.20241)

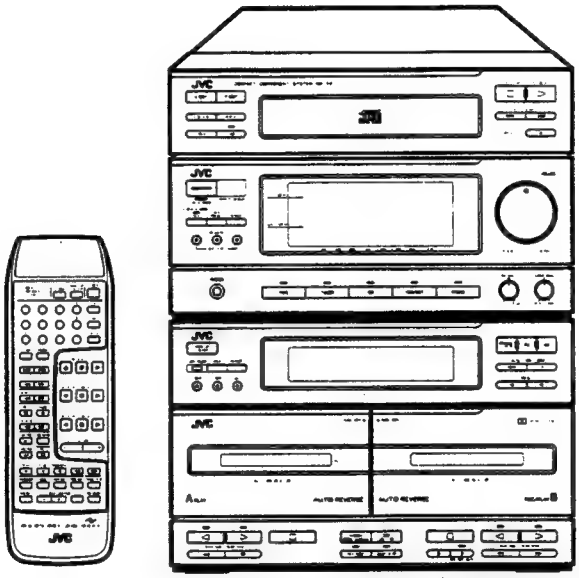
Printed in Ja
9103 (S)

JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

MODEL No. CA-MX50BK



COMPACT disc DIGITAL AUDIO

This Service Manual is mainly for Accessories , Packing Materials , Part Numbers and Instruction Book. About the disassembly procedure , adjustment procedure and so on , we issued another two Service Manuals for AX-MX50BK and DR-MX50BK , so please refer to them.

Component

Compact component (CA-MX50BK) is a unit composing of the following units.

Model No.	Unit No.	Service Manual No.
CA-MX50BK	DR-MX50BK(Deck Tuner)	20240
	AX-MX50BK(CD Amplifier)	20241

593

No. 20239
Mar. 1991

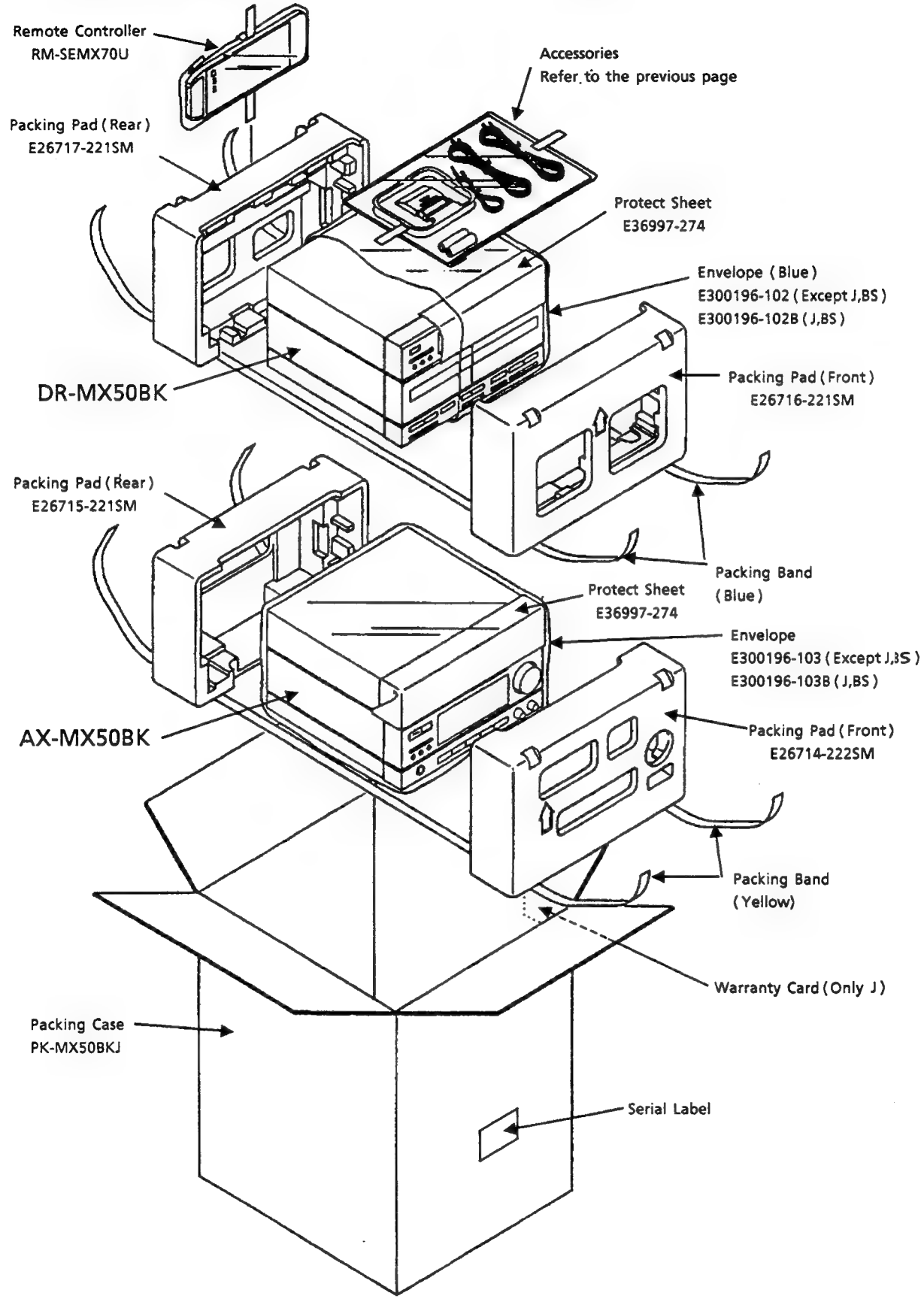
■ Accessories List

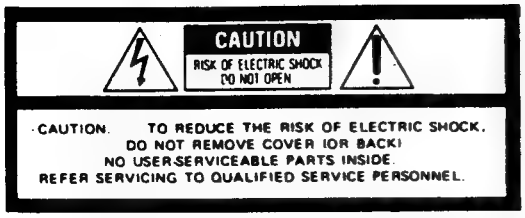
⚠	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1687A	Instruction Book	1		A,U,C,E,G
	E30580-1687ABS	Instruction Book	1		BS
	E30580-1688A	Instruction Book	1		GI
	E30580-1728A	Instruction Book	1		J
	E30580-1729A	Instruction Book	1		V,VX
	BT-20047E	Warranty Card	1		J
	BT-20025K	Warranty Card	1		C
	BT-20060	Warranty Card	1		BS
	BT-20117	Warranty Card	1		G
	BT-20122	Audio Warranty Card	1		A
	BT-20122-1	LTD Sticker	1		A
	BT-20108A	Service Center Network	1		J
	BT20071A	Service Centres List	1		C
	BT-20044G	Safty Guide Sheet	1		J
	BT20066A	EC Service Network	1		BS
	QZL1008-001	FTZ Information Sheet	1		G
	E43486-340A	Safety Instruction Sheet	1		BS
	EQB4001-015	AM Loop Antenna	1		All Countries
	EWP103-009U	Speaker Cord Assembly	2		All Countries
	EWP502-005K	Built in Antenna	1		Except G
	E67007-001	Wire Antenna	1		G
	UM-4NJ-2P	Battery	2		All Countries
	E04056	Siemens Plug	1		U
	E35497-019	Caution Sheet	1		U
	E72360-001	Caution Sheet	1		C
	EMZ2001-011	FM Antenna Adaptor	1		BS,E,GI,V,VX
	QPGA025-03505	Envelope	1	for Accessories	Except BS,J
	QPGA025-03505B	Envelope	1	for Accessories	BS,J
	QPGA020-02505	Envelope	1	for Warranty Card	A,C,G
	QPGA020-02505B	Envelope	1	for Warranty Card	BS
	E66416-003	Envelope	1	for Warranty Card	J
	QPGA010-03005	Envelope	1	for Power Cord	All Countries
	RM-SEMX70U	Remote Control Unit	1		All Countries

The Marks for Designated Areas

J ··· the U.S.A.
U ··· Universal Type
GI···Italy
V···East Europe
C ··· Canada
A ··· Australia
E···Continental Europe
VX···East Europe and U.S.S.R.
G···Germany
BS···U.K.

■ Packing Materials and Part Numbers





The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

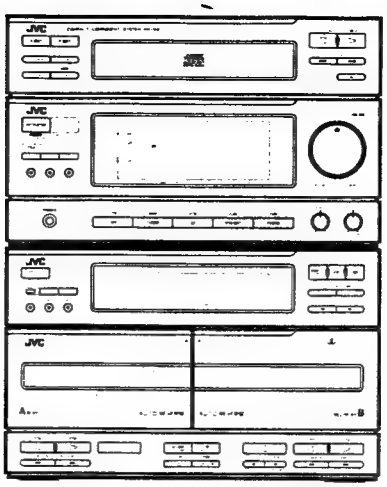
IMPORTANT FOR LASER PRODUCTS

1. CLASS 1 LASER PRODUCT
2. **DANGER:** Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION:** Do not open the top cover. There are no user serviceable parts inside the unit; leave all servicing to qualified service personnel.

Table of Contents

1-4(No.20239)

Introduction



The CA-MX50BK produces a full, powerful bass sound.

- **With JVC's newly-developed forced air cooling system, the CA-MX50BK can produce the same high-quality bass sound as a large stereo system.**

Thank you for purchasing this JVC CA-MX50BK Compact Component Stereo System. We hope it will be valued addition to your home, giving you years of enjoyment.

Be sure to read this instruction manual carefully before operating your new stereo system. Here you will find all the information you need to set up and use the system.

For questions that cannot be answered in this manual, please contact your dealer.

Features

It has a variety of functions, which are equivalent to those of large, expensive stereo systems.

- Remote control of computerized 7-band SEA graphic equalizer.
- Programmable timers for setting recording, wake-up music, and fall-asleep music.
- Storage of 40 radio stations (FM and AM) in memory.
- Fade-out of last track during direct CD-to-tape recording.
- CD tracks can be recorded on both sides of a cassette tape without splitting songs at the end of a side.
- CD tracks can be played back or recorded on both sides of a cassette tape in any order.
- Input terminals for connecting a turntable, a Digital Audio Tape (DAT) Deck, and the sound portion of Video Cassette Recorder (VCR).

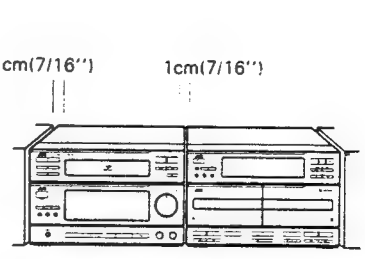
About this Manual

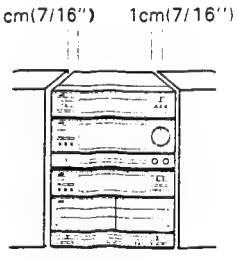
This instruction manual will help you with the following:

- Connecting the components of the system, installing the antennas, and connecting other components (such as a turntable or a VCR) to the system.
- Learning the operations of the components of the system (Amplifier, CD Player, Tape Deck, Tuner, and the Remote Controller).
- Learning additional functions of the system, such as using the timers, using the SEA graphic equalizer, presetting broadcast stations in memory, and using the various recording capabilities.
- Trouble-shooting, if a problem should occur.

Laying Out the System

There are two ways to lay out the system: You can stack the CD/Amplifier on top of the Tape Deck/Tuner, or you can set the two components side-by-side. (Set the CD/Amplifier on the left and Tape Deck/Tuner on the right as you face them.)





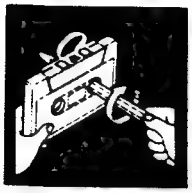
- Leave a space of at least one cm on both sides of the amplifier for ventilation.

(No.20239)1-5

Care and Handling

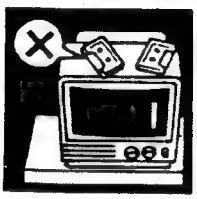
You must handle your compact discs, cassette tapes, and tape deck carefully to keep them for a long time.

Cassette Tape



- If the tape is loose in the cassette, take up the slack by inserting a pencil in one of the reels and rotating.
  If the tape is loose, it may get stretched, cut, or caught in the cassette.

- Do not touch the tape surface.

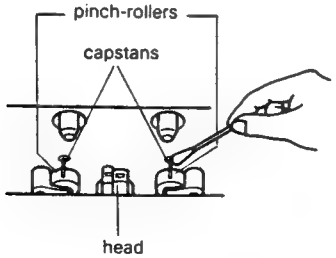


- Do not store the tape:
  — In dusty places
  — In direct sunlight or heat
  — In moist areas
  — On a TV or speaker
  — Near a magnet

Tape Deck

- If the head, capstans, and pinch-rollers of the tape deck become dirty, the following will occur:
  — Impaired sound quality
  — Discontinous sound
  — Fading
  — Incomplete erasure
  — Impossible to record

- Clean the head, capstans, and pinch-rollers with a cotton swab moistened with alcohol.



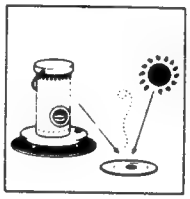
- If the head becomes magnetized, it will produce noise or lose high frequencies.

  To demagnetize the head, turn off the system, and use a head demagnetizer (available at electronics and record shops).

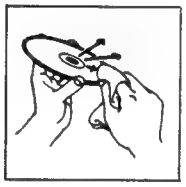
Compact Discs

- Remove the CD from the case by holding it at the edges while pressing the center hole lightly.
- Do not touch the shiny surface of the CD, or bend the CD.

- Place the CD in the tray with the label up.



- Put the CD back in its case after use to prevent warping.
- Avoid exposure to direct sunlight, temperature extremes, and moisture.



- If the CD becomes dirty, wipe it with a soft dry cloth in a straight line from center to edge.

Caution! Do not use any solvent (for example, conventional record cleaner, spray, thinner, benzine, etc.)

Only use compact-discs bearing the mark shown below.

COMPACT disc DIGITAL AUDIO

Important Notes

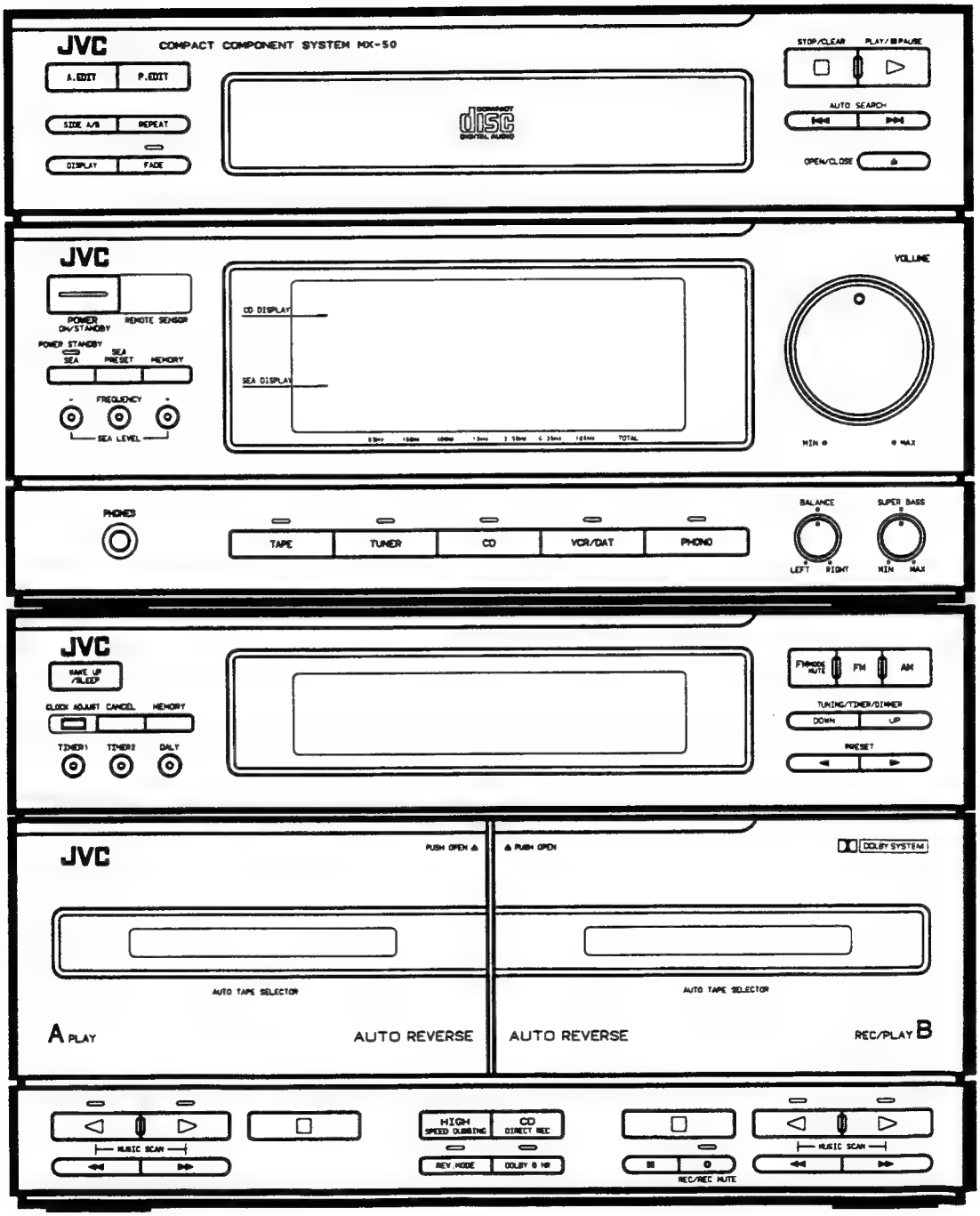
1. **Installation**
- Select a place which is level, dry, and neither too hot nor too cold (between 5 and 35 degrees Celsius/41 and 95 degrees Fahrenheit)
- Be sure there is adequate ventilation; poor ventilation may cause the unit to malfunction.
- Leave sufficient distance between the receiver and your TV.

2. **Power**
- Do not handle the power cord with wet hands!
- When unplugging from the wall outlet, always pull the plug, not the power cord.

3. **Malfunctions, etc.**
- Do not insert any metallic objects into the receiver.

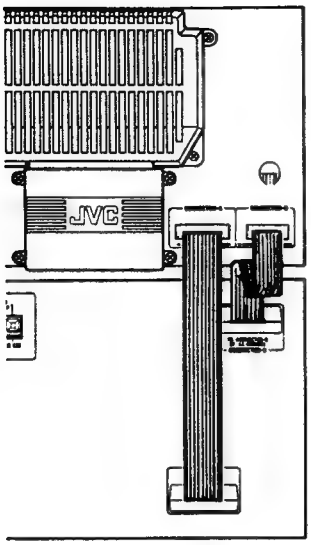
CAUTION

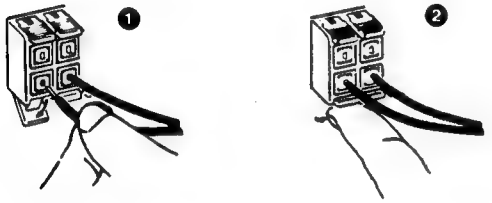
To reduce the risk of electrical shocks, fire, etc.:
1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

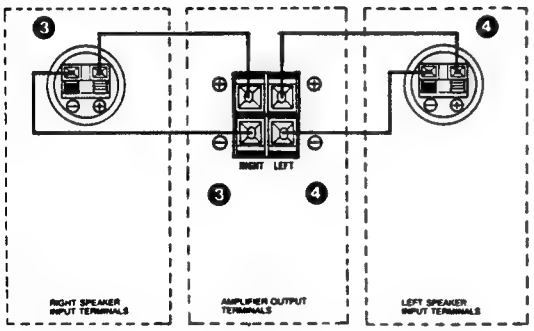

JVC
COMPACT COMPONENT SYSTEM MX-50
A.EDIT
P.EDIT
SIDE A/B
REPEAT
DISPLAY
FADE
STOP/CLEAR
PLAY/PAUSE
AUTO SEARCH
OPEN/CLOSE
POWER ON/STANDBY
REMOTE SENSOR
POWER STANDBY
SEA
SEA PRESET
MEMORY
FREQUENCY
SEA LEVEL
CD DISPLAY
SEA DISPLAY
VOLUME
MIN
MAX
PHONES
TAPE
TUNER
CD
VCR/DAT
PHONO
BALANCE
LEFT
RIGHT
SUPER BASS
MIN
MAX
CLOCK ADJUST
CANCEL
MEMORY
TIMER1
TIMER2
DAILY
FM MODE MUTE
FM
AM
TUNING/TIMER/DIMMER
DOWN
UP
PRESET
PUSH OPEN
DOLBY SYSTEM
AUTO TAPE SELECTOR
AUTO TAPE SELECTOR
A PLAY
AUTO REVERSE
AUTO REVERSE
REC/PLAY B
MUSIC SCAN
HIGH SPEED DUBBING
CD DIRECT REC
REV.MODE
REC/REC MUTE
MUSIC SCAN

Getting Started

Connecting the System Components







Connection Notes

- Before you plug in the system, you must make all the necessary connections.

Connecting the Two stereo Components

- Connect the CD/Amplifier component and the Tape Deck/Tuner component.

Connect the two ribbon cables (Connectors A and B) from the Tape Deck/Tuner component to the CD/Amplifier component.

- If the system does not work well or needs repairing, please take both the CD/Amplifier and Tape Deck/Tuner components with you to the nearest agent.

Connecting the Speakers

Speaker Terminals

❶ When connecting speakers, open each terminal and insert the end of the speaker wire as shown.
❷ Close the terminals as shown to clamp the speaker wires in place.

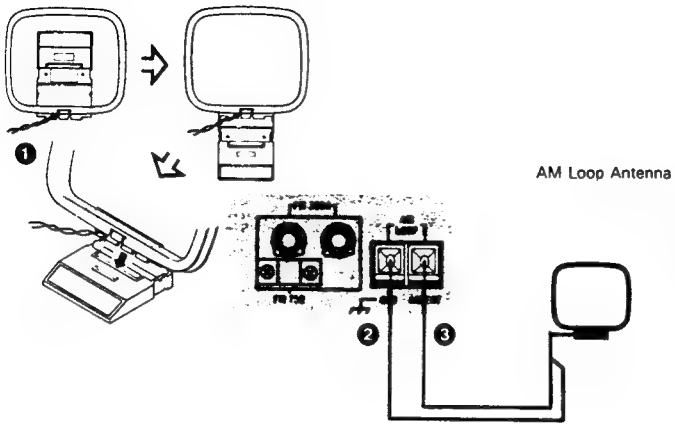
Speakers

Connect a pair of speakers to the CD/Amplifier component as follows:
❸ Connect the (+) and (−) terminals of the right-side Speaker to the (+) and (−) terminals marked RIGHT on the rear panel.
❹ Connect the (+) and (−) terminals of the left-side Speaker to the (+) and (−) terminals marked LEFT on the rear panel.

Important! *Be sure to match the polarity of the speaker terminals with the polarity of the terminals on the CD/Amplifier. (+) to (+) and (−) to (−).*

- Use speakers with the correct impedance.
  The correct inpedance is indicated on the rear panel of the CD/Amplifier.

AM and FM Antenna Connections

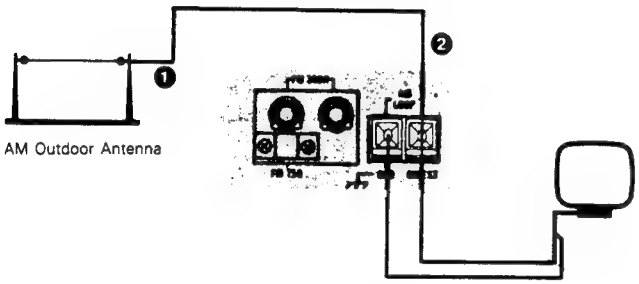


To receive radio broadcasts, you will have to connect AM and FM antennas to the Tape Deck/Tuner component.

FM antennas use two types of cable connections: 75-ohm cables have a round coaxial connection while 300-ohm cables

AM Loop Antenna

1. Fold out the loop from the antenna base.
2. Connect one antenna wire to one of the AM LOOP terminals.
3. Connect the remaining antenna wire to the other AM LOOP terminal.
   Note: These two terminals open and close the same way as the speaker terminals.
4. Adjust the loop antenna as needed to get the best reception.

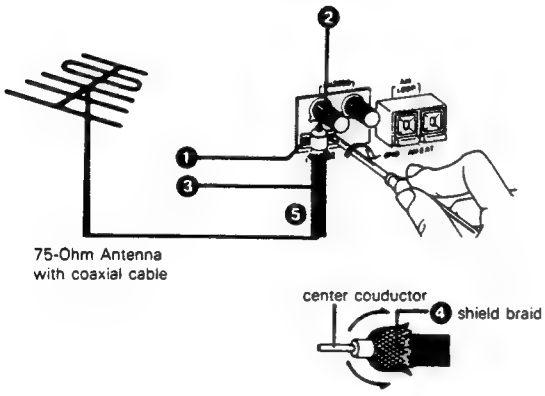


AM Outdoor Antenna

If your AM broadcast reception is unsatisfactory, you should connect an AM outdoor antenna in addition to the loop antenna.

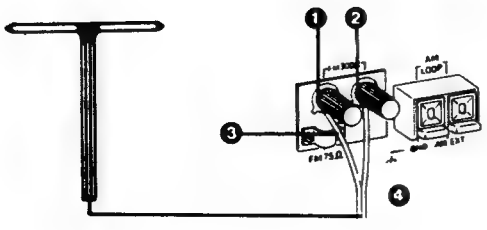
Important! The AM loop antenna must be installed to receive AM broadcasts. Do not disconnect the loop antenna when installing an outdoor antenna.

1. Install a single vinyl-covered antenna wire outdoors. The antenna wire should be about 16 to 40 feet (5 yo 12 meters) long.
2. Connect one end of the antenna to the AM loop terminal marked AM EXT.
   Note: Except for the connection, make sure no uninsulated antenna wire touches the rear panel of the CA-MX50BK. Otherwise, you might not receive AM broadcasts.



FM 75-Ohm Antenna Cable

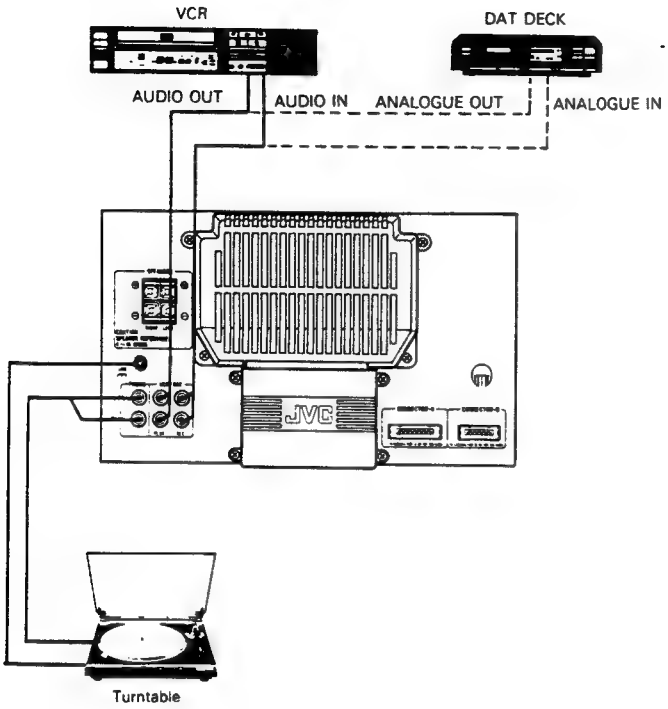
1. Loosen the screws holding the bracket.
2. Loosen the cap of the 300/75-ohm terminal.
3. Insert the round antenna cable through the bracket from below.
4. Make sure that the shield braid on the cable contacts the bracket, and that the center conductor of the cable contacts the 300/75-ohm terminal.
5. Tighten the bracket screws and the cap on the 300/75-ohm terminal.



FM 300-Ohm Antenna Cable

1. Loosen the cap on the 300/75-ohm terminal.
2. Loosen the cap on the 300-ohm terminal.
3. Connect the two conductors of the antenna cable tot he 300/75-ohm terminal and the 300-ohm terminal.
4. Tighten the caps on both terminals.
   Note: Whether you use the 75-ohm or 300-ohm cable, make sure the antenna conductors do not touch any other terminals ont he rear panel. This could cause poor reception.

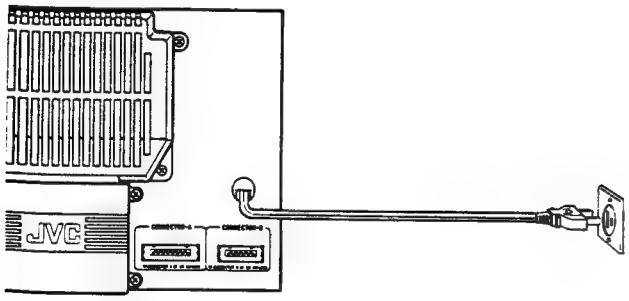
Connecting Other Components



The CA-MX50BK can also be connected to a turntable, a Video Cassette Recorder (VCR), and a Digital Audio Tape (DAT) Deck.

Attach these components as shown below.

AC Power Connection



Plug the power cord on the back of the CA-MX50BK into a 120 volt, 60 Hz AC household electrical outlet.

Caution: To prevent electric shock, turn all stereo components off before you install or remove power cords.

Important! Before you plug the power cord into an outlet, make sure all stereo components are connected correctly.

Using the Amplifier

Using the Power Switch

1. **Press the POWER switch to turn on the CA-MX50BK stereo system.**

   When the POWER switch is not pressed and the power cord is plugged in, the stereo is in STANDBY mode and POWER STANDBY indicator lights. In STANDBY mode, the stereo uses a small amount of power (13 watts) for the clock, memory contents, and any timers which are set.

2. **To disconnect power completely, unplug the power cord.**

Adjusting the Volume Controls

Volume
Turn the VOLUME knob to adjust the volume level of the speakers or headphones.

- Connect headphones to the PHONES jack on the amplifier for listening through headphones. No sound will be produced from the speakers.

Balance
Turn the BALANCE knob to adjust the left-and-right sound balance in the speakers or headphones.

Super Bass
Turn the SUPER BASS knob to adjust the deep bass sound level. Turning this control toward MAX will boost the low frequencies.

Using the SEA Function

You can think of the SEA function as an enhanced version of the conventional Bass and Treble knobs on most sound systems. Use it to alter the tone of the source (for example, CD, tape, or broadcast) by increasing or decreasing the levels of selected frequency ranges.

The total frequency range that the CA-MX50BK can reproduce (from the lowest-pitched sounds to the highest) is divided into seven sections: 63Hz, 160Hz, 400Hz, 1kHz, 2.5kHz, 6.3kHz, and 16kHz.

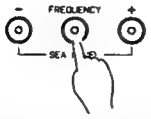
By making certain frequency ranges louder or softer, you can change the sound to suit your taste. You can also choose from six pre-programmed SEA settings.

Controlling Sound with the SEA Function

1. **Press the SEA button on the Amplifier.**

   The SEA indicator lights up.

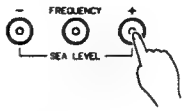
2. **Press the FREQUENCY button on the Amplifier to select one of the seven frequency ranges to work on.**



   The frequency selected changes with each press of the FREQUENCY button in this order (from lowest to highest):

   ▶63Hz ▶ 160Hz▶ 400Hz ▶ 1kHz ▶ 2.5kHz ▶ 6.3kHz ▶ 16kHz ▶ (back to the beginning)

3. **Press the SEA LEVEL button (+ or −) on the Amplifier to set the level for the selected frequency range.**



   - Press the + button to increase sounds in the selected frequency range, and pressing the − button to decrease sounds in this frequency range.
   - Repeat steps 2-3 for each frequency range.

Note: If you want to compare the new sound you have created with the way the system sounded before, press the SEA button on the Amplifier and listen to a selection of music. Then press the SEA button again to hear the new sound.

4. **Press the MEMORY button on the Amplifier to store your SEA pattern in memory.**

Using an SEA Pattern

You can use the SEA pattern you created, or one of the six pre-programmed SEA patterns, each of which has its own sound characteristics.

The pre-programmed SEA patterns are:

A	(ROCK)	Boosted low and high frequencies.
B	(JAZZ)	Gives a feeling of a live atmosphere. Good for acoustic music.
C	(POPS)	Good for vocal music.
D	(CLASSIC)	Set for wide and dynamic sound stereo systems.
E	(HEADPHONE)	When creating tapes for headphone use.
F	(CAR)	When creating tapes for use in a car stereo.

1. **Press the SEA button on the Amplifier.**

   The SEA indicator light goes on.

2. **Press the SEA PRESET button to select an SEA Pattern.**

   Each press of the SEA PRESET button changes the pattern displayed in the following order:

▶ M (your pattern) ▶ A (ROCK) ▶ B (JAZZ) ▶ C (POPS) ▶ D (CLASSIC) ▶ E (HEADPHONE) ▶ F (CAR) ▶ (back to the beginning)

Using TURNTABLE, VCR and DAT

In addition to the CD Player, Tuner, and Cassette Tape Deck, the CA-MX50BK can also play a turntable, a VCR, and a DAT.

1. **To play records, press the PHONO button on the Amplifier.**
   To play VCR or DAT, press the VCR/DAT button on the Amplifier.

2. **To operate the each component, refer to its instruction manual.**
   - You can operate a JVC VCR and DAT using the remote controller. See page 23 for more information.

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Using the CD Player

Starting Playback

1. **Press the OPEN/CLOSE button on the CD Player.**

The CD tray slides out.

2. **Place a CD (with the label facing up) in the tray, and press the OPEN/CLOSE button again.**

The tray slides back in.

3. **Press the PLAY/PAUSE button on the CD Player, or the CD button on the Amplifier.**

The CD Player begins playing the first track on the CD.

Stopping Playback and Ejecting the CD

1. **Press the STOP/CLEAR button.**

2. **Press the OPEN/CLOSE button, and take the CD out of the tray.**
3. **Press the OPEN/CLOSE button again to close the tray.**

Stopping and Restarting Playback

1. **Press the PLAY/PAUSE button.**

Playback stops temporarily.

2. **Press the PLAY/PAUSE button again.**

Playback restarts.

Note: When Tuner is selected as the source, Cd OFF is displayed, and only the OPEN/CLOSE disc tray and PLAY/PAUSE buttons can be used. To use other buttons, press the CD button on the Amplifier or the PLAY/PAUSE button on the CD Player first.

Selecting a Track to Play

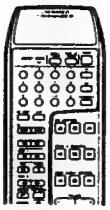
Press the AUTO SEARCH buttons to scan through the track numbers.

Press the ⏮ button to find tracks with decreasing numbers, and the ⏭ button to find tracks with increasing numbers.

- If you press the AUTO SEARCH buttons when the CD Player is in the pause/stop mode, you will find the track you selected.
  You can restart playback by pressing the PLAY/PAUSE button.
- If you press the AUTO SEARCH buttons during playback, you will find the track you selected. Playback restarts at the beginning of the selected track.

A red mark appears above the selected track number on the display.

Using the Remote Controller to Select a Track



There are three ways to search for a track with the remote controller:

Numeric keypad

AUTO SEARCH buttons ⏮ or ⏭

MANUAL SEARCH buttons ◀◀ or ▶▶

Using the Numeric Keypad

1. **Press the CD 10KEY button on the Remote Controller.**
2. **Enter the track's number with the numeric keys.**
   - If the track you want to hear is the 8th track, press the 8 key.
   - If the track you want to hear is the 15th track, press the +10 key and the 5 key.
   - If the track you want to hear is the 20th track, press the +10 key and the 10 key.

Note: If the track number is greater than 20, the red mark will not appear.

Using the Auto Search Buttons

Press the Auto Search ⏮ or ⏭ button on the Remote Controller. See "Selecting a Track to Play".

Using the Manual Search Buttons

Press the Manual Search ◀◀ or ▶▶ buttons on the Remote Controller to search for a certain part of the track.

Listening Repeatedly

Using the REPEAT button, you can play the entire CD or a selected track repeatedly.

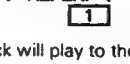
Playing the Entire CD Repeatedly

- During playback, press the REPEAT button once.

The CD will play through the last track and then start over again. It will keep repeating until you cancel the repetition.

Playing a Selected Track Repeatedly

- During playback, press the REPEAT button twice.



The current track will play to the end and then start over again. It will keep repeating until you cancel the repetition.

Cancelling Repetition

Press the REPEAT button again.

Each track will play to the end and not repeat.

Displaying the Elapsed and Remaining Playing Time

Using the DISPLAY button, you can display the total time the CD (or current track) has been playing, and the amount of time that remains. This is useful in situations such as recording, when you need to know how long the track or CD has been playing, or the amount of time that remains on the track or CD.

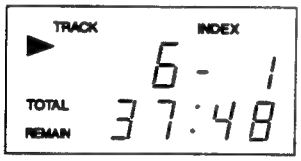
Press the DISPLAY button to show the time you want.

There are four display times:

EACH	The total elapsed playing time since the beginning of playback of the current track
EACH REMAIN	The time remaining until the end of the current track
TOTAL	The total elapsed playing time since the beginning of playback of the CD
TOTAL REMAIN	The time remaining until the end of the CD

The display changes each time you press the DISPLAY button.

For Example:



Display mode:	TOTAL REMAIN
Current track:	6th
Total remaining time:	37 minutes 48 seconds

Programming Your Own Playback Sequence

You can program the CD Player to play back the tracks of a CD in any order.

1. **Press the STOP/CLEAR button on the CD Player.**

   This puts the CD Player in STOP mode and clears existing programs from the memory.

2. **Press the PROGRAM button on the Remote Controller.**

3. **Press the CD 10KEY button on the Remote Controller.**

4. **Enter the track numbers with the numeric keys in the order you want them played back.**

   - You can program up to 32 tracks.

   If the total time of all the programmed tracks is 100 minutes or more, the display will show "——:——" (since the highest time the display can show is "99:59").

5. **Press the PLAY/PAUSE button on the CD Player, or the CD CONTROL-▷ button on the Remote Controller.**

   Playback begins with the first track in the program.

6. **To cancel programed playback, press the PROGRAM button on the Remote Controller.**

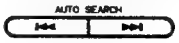
   This puts the CD Player in normal playback mode. The tracks will play back in their regular order.

Checking the Program

You can check the programmed sequence of playback to determine which tracks will be played in which order.

Note: The program contents cannot be displayed during playback. Press the STOP/CLEAR button if the CD Player is in play mode.

1. **Press the AUTO SEARCH button once.**



The first track in the program is displayed, along with its sequence number.

For example:

This display shows that the 6th track will be played first.

2. **Press the AUTO SEARCH button repeatedly.**

   The rest of the tracks in the program are displayed, along with their sequence numbers.

Listening to Programmed Tracks Repeatedly

1. **Press the REPEAT button to listen to the programmed sequence of playback repeatedly**

2. **Then press the PLAY/PAUSE button.**

Updating the Program

You can add and delete tracks from the program.

Adding Tracks to the Program

1. **Press the CD 10KEY button on the Remote Controller.**

2. **Enter the track numbers with the numeric keys in the order you want them played back.**

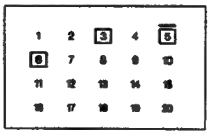
   The track numbers you enter are added to the end of the program.

Deleting Tracks from the Program

Note: The program contents cannot be deleted during playback. Press the STOP/CLEAR button if the CD Player is in play mode.

1. **Press the AUTO SEARCH buttons to select the track to be deleted from the program.**

   For example:



A red mark is displayed above the track that is to be deleted.

2. **Press the CANCEL button on the Remote Controller.**

- The track number with the red mark above it is deleted from the program.
- If the CANCEL button is pressed and no track has been selected for deletion, the last track in the program is deleted.

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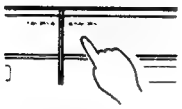
Using the Tape Deck

The tape deck has an Auto Tape Select feature, which can tell the difference between various types of cassette tape. It can distinguish between Normal (Type I), CrO_2 — High Position (Type II), and Metal (Type IV).

Playing a Tape

1. **Press the PUSH OPEN on the corner of the cassette holder.**



2. **Insert a cassette and shut the cassette holder.**
3. **If the tape was recorded with Dolby B noise reduction, press the DOLBY B NR button.**
   The indicator ight will go on.

4. **Start playback by either of the following methods:**
   - Press the ◁ ▯ ▷ button.

     Press the ▷ button if the tape is wound mostly on the left side.

     Press the ◁ button if the tape is wound mostly on the right side.

   - Press the TAPE button on the Amplifier.

Note: When cassettes are in both decks A and B, deck B starts first.

Stopping Playback and Ejecting the Tape

1. **Press the STOP button on the tape deck.**

2. **Press the PUSH OPEN on the corner of the cassette holder to open and remove the tape from the cassette holder.**
3. **Shut the cassette holder.**

Note: If the system is turned off while a tape is playing, you may not be able to eject the tape. You will need to turn the system back on and press the PUSH OPEN on the cassette holder to open it.

Stopping and Restarting Playback

1. **Press the PAUSE button on the tape deck.**

   Playback of the tape in deck B stops temporarily.

   Note: The PAUSE button only applies to deck B.

2. **Press the ◁ or ▷ button.**

   This restarts playback of the tape in deck B.

Changing the Playback Direction

1. **To change the playback direction during playback, press the ◁ or ▷ button.**

   The other side of the tape will now play.

2. **To change the playback direction without starting playback, press the ◁ or ▷ button while also pressing the stop □ button.**

   This allows you to set the tape direction for a timed recording.

Fast-Winding the Tape

Press the ◂◂ or ▸▸ buttons on the Tape Deck to advance the tape rapidly in the direction of the arrows.

Listening to Tape Continuously

You can set the tape deck up to play both sides of the tapes in decks A and B repeatedly.

1. **Insert cassettes into decks A and B.**
2. **Press the REV. MODE button of deck B.**

   - Deck B will be placed in auto reverse mode, which means that it will play all of one side of the tape and then all of the other side.
   - Deck A is automatically in auto reverse mode.

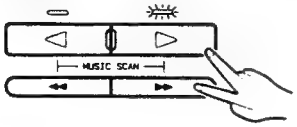
3. **Press the ◁ or ▷ button of the deck to be started first.**

   - Now both sides of both tapes will play repeatedly.
   - If deck B is not placed in auto reverse mode, all of the tape in deck A will play, but only one side of the tape in deck B will play.
   - If you press the TAPE button on the Amplifier, deck B will start first.

Music Scanning

The music scan function will detect the blank segments between tracks. The blank should be about 4 seconds long for the music scan to be effective.

You can locate the beginning of the current track or next track quickly by pressing the playback button and the fast-winding button simultaneously.



Searching for Beginning of the Current Track

- If the tape is travelling in the forward direction, press the ◀◀ fast-winding button while simultaneously pressing the ▷ playback button.
- If the tape is travelling in the reverse direction, press the ▶▶ fast-winding button while simultaneously pressing the ◁ playback button.

Searching for Beginning of the Next Track

- If the tape is travelling in the forward direction, press the ▶▶ fast-winding button while simultaneously pressing the ▷ playback button.
- If the tape is travelling in the reverse direction, press the ◀◀ fast-winding button while simultaneously pressing the ◁ playback button.

Note: The deck that is playing will stop if the music scan function is used on the other deck.

The music scan function is not effective:
- When the track being scanned contains an area of low sound level.
- When the blank between tracks is short.
- When there is noise, for example, a hum between tracks.

Recording a Tape

Recording Notes:

- Deck A is used for playback only, and deck B is used for both recording and playback.
- To reduce hiss, use the Dolby B noise reduction system. Press the DOLBY B NR button. The indicator light will go on.

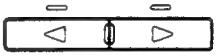
- To record on sides A and B continuously, press the REV. MODE button. The indicator light will go on.
- The recording level is set automatically.
- If you don't want to hear the system during recording, turn the VOLUME knob on the Amplifier down.
- If the small tabs on cassette tapes to prevent accidental erasure have been removed, the contents of the tape cannot be recorded or erased over. To record or erase, cover the holes with adhesive tape. (The tab in the upper left corner is the tab for the side facing you, and the other tab is for the opposite side.)
- If you are recording an AM broadcast and you hear interference, move the BEAT CUT switch on the back of the stereo from Position 1 (the normal mode) to Position 2.

Recording from Various Sources

1. **Insert a cassette for recording into deck B.**
2. **Select the source you are recording from TAPE (Deck A), TUNER, CD, VCR/DAT, PHONO.**
3. **Press the Pause ❚❚ button on the Tape Deck while simultaneously pressing the REC/REC MUTE button.**

This puts the deck B in REC/PAUSE mode.

4. **Start the source to be recorded.**
5. **Press the Play ◁ or ▷ button on deck B to start recording.**



To record on both sides of the tape, start recording in the forward (▷) direction.

6. **To stop recording, press the Stop □ button.**
7. **To stop recording temporarily, press the Pause ❚❚ button on deck B.**
8. **To restart recording again, press the Play button ◁ or ▷**

Dubbing a Tape

Normal-Speed Dubbing

1. **Insert the cassette for playback into deck A and the cassette for recording into deck B.**
   - The type of tape (Normal, CrO_2, or Metal) used for recording must be the same as that used for playback.
   - To dub a tape which was recorded with Dolby B noise reduction, press the DOLBY B NR button on the Tape Deck and the SEA button on the Amplifier to the OFF position.
2. **Press the Pause ❚❚ button while simultaneously pressing the REC/REC MUTE button on deck B.**

   This places deck B in REC/PAUSE mode.
3. **Press the Play button ◁ or ▷ (depending on which side of the tape you want to record from) on deck A.**
4. **Press the Play button ◁ or ▷ (depending on which side of the tape you want to record onto) on deck B.**

The tape-to-tape recording starts.

Note: You cannot listen to another source during normal-speed dubbing.

- To stop normal-speed dubbing before the end of either the playback or record tape, press the Stop □ buttons on decks A and B.

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High-Speed Dubbing

1. **Insert the cassette for playback into deck A and the cassette for recording into deck B.**

   ■ To change the playback direction of deck A, hold down the Stop □ button and press the ◁ or ▷ buttons.

2. **Press the HIGH SPEED DUBBING button on the Tape Deck.**

   ■ The high-speed tape-to-tape recording starts.

   Note: You can listen to another source while high-speed dubbing is in progress.

   ■ To stop high-speed dubbing before reaching the end of either the playback or record tape, press the Stop □ button on deck B.

   Note: If a nearby television is on during high-speed dubbing, a beeping noise may be recorded onto the record tape. Turn off the television or move it farther away.

3. **Press the Stop □ button on deck A when you hear the end of a track to record from many different tapes (for example, to create a "Greatest Hits" tape)**

   Deck A stops playback, and deck B automatically creates about a 4 second blank, then pauses.

4. **Put another tape into deck A.**

5. **Press the HIGH SPEED DUBBING button on the Tape Deck.**

   The high-speed dubbing restarts.

6. **To record tracks from other tapes, repeat steps 3 - 5.**

   ■ The SEA Function is not effective during high-speed dubbing.

Note: It may be unlawful to record or playback copyrighted material without the consent of the copyright owner.

Erasing a Tape

1. **Insert the tape to be erased into deck B.**

   ■ To erase music on both sides, press the REV. MODE button on the Tape Deck.

2. **Press the Pause ⏸ button while simultaneously pressing the REC/REC MUTE button.**

   This puts the deck in REC/PAUSE mode.

3. **Press the TAPE button on the Amplifier.**

4. **Press the ◁ or ▷ button (depending on which side of the tape you want to erase) on deck B.**

   The erasure of the tape begins.

Direct Recording from the CD Player

Direct recording permits a tapedeck to start recording automatically in synchronism with a CD player.

1. **Insert the cassette for recording into deck B.**

   ■ Press the REV.MODE button on the Tape Deck if you want to record on both sides of the cassette.

2. **Put a CD in the CD Player.**

3. **Press the CD DIRECT REC button on the Tape Deck.**

   ■ The CD Player and the Tape Deck are activated, and recording begins with the first track of the CD.
   ■ To stop direct recording, press the Stop □ button on deck B or the STOP/CLEAR button on the CD Player.

4. **To fade out the CD gradually at the end of the tape, press the FADE button on the CD Player.**

   The volume level of the last track on the tape is lowered gradually to 0. This makes a nice ending to your tape and prevents an abrupt cut-off of music if the tape ends before the CD.

5. **To cancel the fade-out function during recording, press the FADE button again on the CD Player.**

   The fade-out function operates in both forward and reverse directions.

   ■ When the end of the tape is reached, the tape is rewound to the beginning of the last track.
   ■ The last track is played back again from the CD Player and recorded again on the tape. This time the sound level is reduced gradually at the end.

Recording CD Tracks in Auto-Edit Mode

In Auto-Edit mode, tracks from the CD will automatically be selected to determine which tracks should go on side A of the tape and which should go on side B.

The selection is based on the lengths of the tracks and the length of the tape. This ensures a proper "fit" of the tracks recorded on the tape. It prevents a track from being cut off when the end of the tape is reached.

1. **Insert the cassette for recording in deck B.**
   - Press the REV. MODE button on the Tape Deck if you want to record on both sides of the cassette.
2. **Put the CD in the CD Player.**
3. **Press the STOP/CLEAR button on the CD Player.**
4. **Press the A. EDIT button on the CD Player to tell the system the length of the tape in the Tape Deck.**

   - The tape length most suitable for CD recording is displayed first.
   - Each time the A. EDIT button is pressed, the next standard tape length blinks, in this order:

     ▶C46▶C54▶C60▶C74▶C90▶ (back to the beginning)

   - You can also enter a non-standard tape length from the Remote Controller using the numeric keys.

   For example: To enter a tape length of 50 minutes, press the CD 10KEY button on the Remote Controller, then press the +10 key four times and the 10 key once.
5. **Press the SIDE A/B button on the CD Player.**

   - The number of each track selected for placement on side A or B blinks on the display.
   - If there are track numbers that do not blink after you have pressed the SIDE A/B button, this means that the tape has more room. To add these tracks, use the numeric keys on the Remote Controller.
   - If you do not press the SIDE A/B button, the CD Player automatically decides which tracks should be placed on sides A and B about 4 seconds after the A. EDIT button is pressed.

   Note: Up to 16 tracks can be allocated for each side of the cassette.
6. **Press the CD DIRECT REC button on the Tape Deck.**

   - The tape is automatically rewound to the beginning of side A, and then recording begins.
   - When deck B is set in the auto reverse mode, after the last track is recorded on side A, the tape deck high-speed-erases to the end of side A. Then it changes direction to side B and begins recording the remaining tracks.
   - To stop recording, press the Stop □ button on deck B, or press the STOP/CLEAR button on the CD Player.

Note: During recording in the Auto-Edit Mode, do not operate the CD Player.

Recording CD Tracks in Programmed-Edit Mode

In Programmed-Edit Mode, you decide which tracks from the CD will be recorded, and in what order.

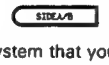
1. **Insert the cassette for recording in deck B.**
   - Press the REV. MODE button on the Tape Deck if you want to record on both sides of the cassette.
2. **Put the CD in the CD Player.**
3. **Press the STOP/CLEAR button on the CD Player.**
4. **Press the P. EDIT button on the CD Player to tell the system the length of the tape in the Tape Deck.**

   - Each time the P. EDIT button is pressed, the next standard tape length blinks, in this order:

     ▶ C46 ▶ C54 ▶ C60 ▶ C74 ▶ C90 ▶ (back to the beginning)

   - You can enter a non-standard tape length from the Remote Controller using the numeric keys.

   For example: To enter a tape length of 50 minutes, press the CD 10KEY button on the Remote Controller. Then press the +10 key four times and the 10 key once.
5. **Press the SIDE A/B button on the CD Player.**



   - This tells the system that you will be choosing tracks to be recorded on side A of the tape.
   - The length of time for one side of the tape is displayed. This is half of the total tape length. The total time for the tracks you choose for each side cannot exceed this time.
   - If you do not press the SIDE A/B button, side A is automatically selected.
6. **Press the CD 10KEY button on the Remote Controller.**
7. **Enter the numbers of the tracks you want recorded on one side of the tape.**
   - Tracks on a CD assigned numbers 32 or greater cannot be entered in the program.
   - If the length of a track exceeds the remaining tape length, the time indication blinks on the display. Choose a different track number.
   - To delete a track from the program, specify the track with the AUTO SEARCH buttons on the CD Player. Then press the CANCEL button on the Remote Controller.
8. **If you also want to record on the other side of the tape, press the SIDE A/B button on the CD Player and repeat step 7.**
9. **Press the CD DIRECT REC button on the Tape Deck.**

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- The tape is automatically rewound to the beginning of side A, and then recording begins.
- When deck B is set in auto-reverse mode, after the last track is recorded on side A, the tape deck high-speed-erases to the end of side A. Then it changes direction to side B and begins recording the remaining tracks.
- To stop recording, press the STOP button on deck B, or press the STOP/CLEAR button on the CD Player.

Note: The program cannot be edited during recording. To change the program, press the STOP/CLEAR button on the CD Player and begin with step 4 of this procedure.

Note: During recording in the Programmed-Edit Mode, do not operate the CD Player.

Recording With the SEA Function

The SEA Function is used to alter the tone of the source by increasing or decreasing the levels of selected frequency ranges.

You can use this function to control the way the tracks from the CD will sound when they are recorded on the tape.

1. **Insert the cassette for recording in deck B.**
2. **Press the SEA button on the Amplifier.**
   - The indicator light will go on.
   - To create the desired sound, see "Controlling Sound with the SEA Function" on page 9.
3. **Press the ◁ or ▷ button on the Tape Deck while holding down the REC/REC MUTE button.**

   Recording starts.

SEA Function Notes

- The SEA Function cannot be used during high-speed dubbing.
- If the source you are recording from is a cassette in deck A that was created using Dolby B noise reduction, the noise reduction effect is lost when you dub using the SEA Function.
- To keep the noise reduction effect of the cassette in deck A, use either of these methods:
  - High-speed dubbing.
  - Normal speed dubbing, with the SEA Function off and the DOLBY B NR button set to OFF.

Creating a Blank During Recording

Use the Record Muting function when you do not want to record a section of the source.

1. **Press the REC/REC MUTE button on the Tape Deck at the beginning of the section you don't want to record.**

   A blank of about 4 seconds is created on the cassette, and then the deck pauses.
2. **To start recording again, press the ◁ or ▷ button.**
   - To create a blank of more than 4 seconds, hold down the REC/REC MUTE button. When you release this button, the deck pauses.
   - When the source you are recording from is the CD Player and the CD REC START button is used, the REC/REC MUTE button will not function.

Recording with the Timer

The CA-MX50BK can be set up to record a tape automatically. This is especially useful for recording broadcasts when you are not around, or late at night when you are asleep.

1. **Insert a cassette for recording into deck B.**
2. **Set the timer, by following the steps in "Setting the Timers" on page 18.**
3. **Select one of the following sources:**

TUNER TIMER REC	Records TUNER preset stations
—— TIMER REC	Records from the source selected before turning off the system

Using the Tuner

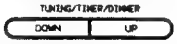
Listening to Broadcasts

The Tuner of the CA-MX50BK can receive FM and AM broadcasts. Stations can be tuned in manually, automatically, or from preset memory storage.

Manual Tuning

1. **Select the broadcast band you want to tune in by pressing the FM or AM button on the Tuner.**

2. **Press the TUNING/TIMER/DIMMER button (UP or DOWN) to tune in a station.**



3. **Hold down the TUNING/TIMER/DIMMER button to change the frequency rapidly, then tap the button to set the frequency precisely.**

Automatic Tuning

1. **Select the broadcast band you want to tune in by pressing the FM or AM button on the Tuner.**
2. **Hold down the TUNING/TIMER/DIMMER button (UP or DOWN) for a moment, and then release the button.**

- When a station is tuned in, the TUNED indicator lights up.

Note: The Tuner will tune in the nearest strong station.

Presetting Stations in Memory

You can store up to 40 of your favorite radio stations (FM and AM) in memory, giving you quick, easy access to the stations.

1. **Select a band by pressing either the FM or AM button on the Tuner.**
2. **Press the TUNING/TIMER/DIMMER button (UP or DOWN) to tune in a station.**
3. **Press the MEMORY button on the Tuner.**

The "MEMORY" indicator on the Tuner display blinks for 5 seconds.

4. **Press the PRESET button (◄ or ►) on the Tuner to assign a number (1-40) to the station, or enter a number (1-40) with the Remote Controller's numeric keypad.**

Examples:
To enter 7, press "7"
To enter 17, press "+10", then "7"
To enter 20, press "+10" then "10"

- To enter a number with the numeric keypad, you must press the FM or AM button on the remote controller first.
- If the "MEMORY" indicator has stopped blinking, press the MEMORY button again and repeat step 4.
- If the preset number you choose already has a station assigned to it, the old station will be replaced by the new one.

5. **Press the MEMORY button again.**
This stores the station in memory, with the preset number (1-40) you chose in step 4.
6. **Repeat steps 1-5 for each station you want to store in memory with a preset number.**

Caution! If the system is unplugged or if a power failure occurs, the preset stations stored in memory may be lost.

Cancelling Preset Stations

1. **Press the CANCEL button on the Tuner.**

The "CANCEL" light on the Tuner display blinks for 5 seconds.

2. **Press the PRESET button (◄ or ►) on the Tuner to select the preset station you want to cancel.**

If the "CANCEL" light has stopped blinking, press the CANCEL button again and repeat step 2.

3. **Press the CANCEL button again.**

The preset station will be cancelled.

Tuning in Preset Stations

- Press the PRESET button (◄ or ►) on the Tuner to select the preset station you want. The preset station numbers are displayed sequentially each time you press the PRESET button.
- You can also select a station by entering its preset number on the Remote Controller's numeric keypad.

FM Reception Modes

There are two FM reception modes: AUTO and MONO.

AUTO: Stations are tuned in with either STEREO or MONO, depending on the strength of the FM signal.
MONO: Stations are tuned in with MONO only. This will reduce interference noise of weak stations and make the reception sound better.

1. **Press the FM MODE/MUTE button on the Tuner to switch between the AUTO and MONO reception modes.**

2. **Press the FM MODE/MUTE button on the Tuner to the AUTO mode to receive the station in stereo.**

- If a stereo broadcast is received when the FM band is selected, the "STEREO" light will be displayed on the Tuner.
- If the FM Reception Mode is MONO, the "STEREO" light will not be displayed.

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Using the Timers

Setting the Clock

The clock will be displayed even when the system is turned off. Pressing the TUNING/TIMER/DIMMER buttons (UP or DOWN) will switch between two brightness levels for the clock.

1. **Press the CLOCK ADJUST button on the Tuner.**

The hours digits blink.

2. **Press the TUNING/TIMER/DIMMER button (UP or DOWN) to set the hours digit.**

- Press the UP button to increase the hour, and press the DOWN button to decrease the hours.
- To enter a new hour digit, press the CANCEL button and repeat step 2.

3. **Press the MEMORY button on the Tuner.**

This sets the hour portion of the time.

The minutes digits will blink.

4. **Press the TUNING/TIMER/DIMMER button (UP or DOWN) to set the minutes digit.**

- It's a good idea to set the minutes digits one minute ahead. Then you can start the clock when it reaches the set time exactly (according to the correct time from the TV, radio, or telephone).
- To enter a new minute digit, press the CANCEL button and repeat step 4.

5. **Press the MEMORY button.**

The clock starts as soon as you press the MEMORY button.

Caution: If there is a power failure, or if you unplug the stereo, the clock time will be lost. Repeat steps 1-5 when power is restored.

Setting the Timers

The CA-MX50BK has three timers **(TIMER 1, TIMER 2, DAILY)** that are used to turn the system on and off automatically:

With the timers you can make tape recordings of broadcasts, CD's, or tapes when you're not around. You can also play these music sources at specified times without recording them.

- Use TIMER1 and TIMER2 to record a radio broadcast when you're not home, or late at night when you're asleep.
- Use the DAILY timer to record a broadcast that occurs at the same time every day.
- The procedure for setting TIMER1, TIMER2, and the DAILY timer is the same. You need to tell the system:

— The name of the timer (TIMER1, TIMER2, or DAILY).
— The time the timer should turn the system on.
— The time the timer should turn the system off.
— The source the timer should turn on (Tuner, CD, or Tape).
— The volume level that should be used during recording or playback.

Note: The clock must be set to the correct time for the timers to be effective.

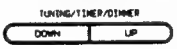
Caution! Do not operate the remote controller when you are programming the timer.

Choosing a Timer

Press the TIMER1, TIMER2, or DAILY button on the Tuner to select a timer. This puts the system in the Timer Setting mode. The information that the system expects next will blink on the display.

Setting the Start Time

1. **Press the TUNING/TIMER/DIMMER buttons to set the hour that the system will turn on.**



The DOWN button makes the hour number decrease, and the UP button makes the hour number increase.

2. **Press the MEMORY button.**

This stores the hour portion of the start-time in memory.

3. **Press the TUNING/TIMER/DIMMER buttons to set the minute.**

4. **Press the MEMORY button.**
This stores the minute portion of the start-time in memory.

Setting the Stop Time

1. **Press the TUNING/TIMER/DIMMER buttons to set the hour that the system will turn off.**
2. **Press the MEMORY button.**

   This stores the hour portion of the stop-time in memory.
3. **Press the TUNING/TIMER/DIMMER buttons to set the minute.**
4. **Press the MEMORY button.**

   This stores the minute portion of the stop time in memory.

Selecting the Source

1. **Press the TUNING/TIMER/DIMMER button to select a source.**

   Repeatedly pressing the UP button displays the sources in the following order:

Display	What it means
-- -- --	Plays from whichever source was used just before turning off the system
TUNER	Plays FM or AM broadcast
TUNER TIMER REC	Records FM or AM broadcast
CD	Plays a CD
TAPE	Plays a tape
-- --TIMER REC	Records from whichever source was used just before turning off the system

   Note: If you choose an FM or AM radio station as the source, select the preset station by pressing the PRESET button on the Tuner.
2. **Press the MEMORY button.**
   This stores the source to play or record in memory.

Setting the Volume

1. **Press the TUNING/TIMER/DIMMER button to select a volume level.**
   Repeatedly pressing the UP button displays the volume levels in the following order:

Display	What It Means
VOL -- --	Volume set to the level used before shut the power off.
VOL -- 0	Volume off
VOL -- A	Volume barely on
VOL -- B	Volume at 1/4 power
VOL -- C	Volume at 1/3 power

2. **Press the MEMORY button.**

   This stores the volume level for timed playback or recording in memory.

Starting the Timer

Press the Timer button to start the timer. The timer you chose should light on the display.

Note: If the timer light does not light, the timer was not set properly, and you need to set the start time again.

To change your selection, press the CANCEL button and enter a new value.

Turning the System Off

Press the POWER button on the Amplifier to turn the system off.

- The system is now programmed to turn on at the preset start-time, and play or record until the stop-time.
- It will record or play the preset source at the preset volume level until the stop-time is reached.
- If you turn the system on before the start-time, the timer will still operate as programmed at the start-time.

Resetting the Timers

To reset a timer, press the button (TIMER1, TIMER2, or DAILY) on the Tuner twice. Now the timer is set again and will use the same start-time, stop-time, source, and volume level as before.

Setting the Wake-Up and Sleep Timers

You can set a timer so it turns on to wake you up or turns off when you go to sleep.

Setting the Wake-Up Timer

The wake-up timer serves as an alarm clock. It turns the system on after a programmed time lapse and plays the source that was used before the system was turned off. You can set a wake-up time from between 5 minutes and 12 hours.

1. **Press the POWER switch on the Amplifier so it is off.**
2. **Press the WAKE UP/SLEEP button on the Tuner.**

   This tells the system that you are going to set the wake-up time.
3. **Press the WAKE UP/SLEEP button repeatedly until the desired wake-up time appears.**

   Each time you press the WAKE UP/SLEEP button, the wake-up time lapse changes in the following order:

   ▶0:05▶0:10▶0:15▶0:30▶0:45▶1:00▶1:30▶2:00▶3:00▶ (every hour) ▶12:00▶ (back to the beginning)

   - If you make a mistake, press the CANCEL button on the Tuner and enter a new wake-up time with the WAKE UP/SLEEP button.

   The system will now turn on after this time lapse.

   - The wake-up timer has priority over TIMER1, TIMER2, and the DAILY timer.
     This means that if the start-time for one of the timers occurs before the wake-up time, the system will wait until the wake-up time to turn on.

   Note: If CD is the source that will be used, playback begins with the first track.

Setting the Sleep Timer

The sleep timer is used to turn off the system after a specified time lapse. With this timer you can fall asleep listening to music, knowing that the system will shut off automatically and not stay on all night. You can set the sleep timer to turn the system off from between 5 minutes and 2 hours

1. **Press the POWER switch on the Amplifier so it is on.**
2. **Start the source you want to listen to.**
3. **Press the WAKE UP/SLEEP button on the Tuner.**

This tells the system that you are going to set the sleep time.

4. **Press the WAKE UP/SLEEP button repeatedly until the desired sleep time appears.**

Each time you press the WAKE UP/SLEEP button, the sleep time lapse changes in the following order:

▶0:05▶0:10▶0:15▶0:30▶0:45▶1:00▶1:15▶1:30▶1:45▶2:00▶ (back to the beginning)

- If you make a mistake, press the CANCEL button on the Tuner and enter a new sleep time with the WAKE UP/SLEEP button.

  The system will now turn off after this time lapse.

- The sleep timer has priority over TIMER1, TIMER2, and the DAILY timer.

  This means that if the stop-time for one of the timers occurs before the sleep time, the system will wait until the sleep time before turning itself off.

Checking the Remaining Time

After setting the wake-up or sleep timer, you can check the time remaining until the system turns on (wake-up time) or shuts off (sleep time).

Press the WAKE UP/SLEEP button.

The remaining time is displayed for 5 seconds. Then the clock time appears again.

Adding More Time

If you want more time before the wake-up timer turns the system on (or the sleep timer turns the system off), follow these steps:

1. **Press the WAKE UP/SLEEP button.**

The remaining time is displayed for 5 seconds. Then the clock time appears again.

2. **Press the WAKE UP/SLEEP button again before the clock time is displayed.**

- Keep pressing this button until the desired additional time is reached.
- The added-time will be displayed in the following order:

▶0:05▶0:10▶0:15▶0:30▶0:45▶ (back to the beginning)

Now the system will wait until the added amount of time until turning on or shutting off.

Cancelling the Time Setting

If you decide you don't want the system to wake you up or play music while you fall asleep, you can turn these timers off.

1. **To cancel the wake-up timer, press the POWER button on the Amplifier.**

This turns the power on.

2. **To cancel the sleep timer, press the POWER button on the Amplifier.**

This turns the power off.

Using the Remote Controller

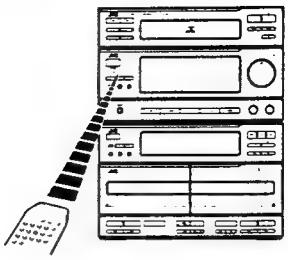
Operating the Remote Controller

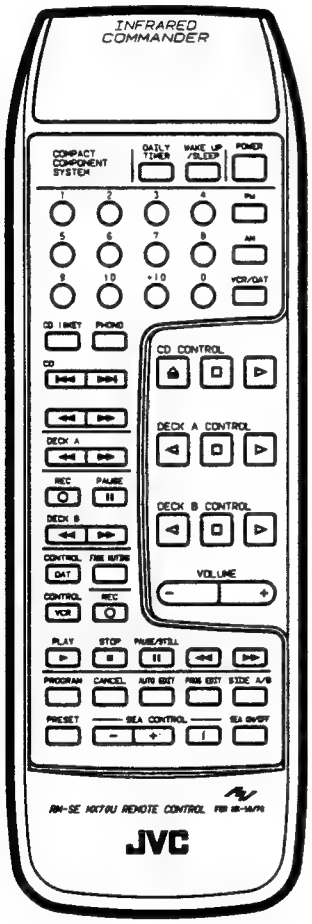
You can use the Remote Controller to operate the CA-MX50BK without leaving your chair. You can use it up to a distance of 23 feet.

Point the Remote Controller at the remote sensor on the Amplifier.

Note: When the Tuner is Selected as the source, and Cd OFF is displayed, only the OPEN/CLOSE and PLAY buttons on the Remote Controller can be used.

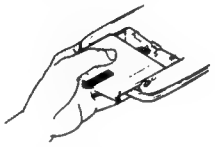
To use other buttons on the Remote Controller (for programming and other operations), press the CD button on the Amplifier or the CD PLAY button on the Remote Controller first.





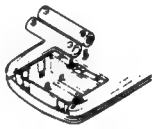
Installing Batteries

1. **Remove the battery compartment lid.**



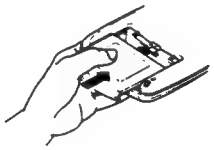
Press the lid and slide it in the direction of the arrow.

2. **Insert the batteries.**



Use two UM-4/AAA/R03 size batteries. Make sure the + and − polarities on the batteries and compartment are the same.

3. **Attach the lid.**



Press the lid and slide it in the direction of the arrow.

Note: Batteries installed incorrectly may burst or leak. Pay attention to the following.

- When the Remote Controller is not in use for a long period of time, remove the batteries.
- Do not mix old and new batteries.
- Do not mix batteries of different types, even if their shapes are the same.
- When batteries become weak, the operating distance of the Remote Controller is greatly reduced and you will need to replace the batteries.

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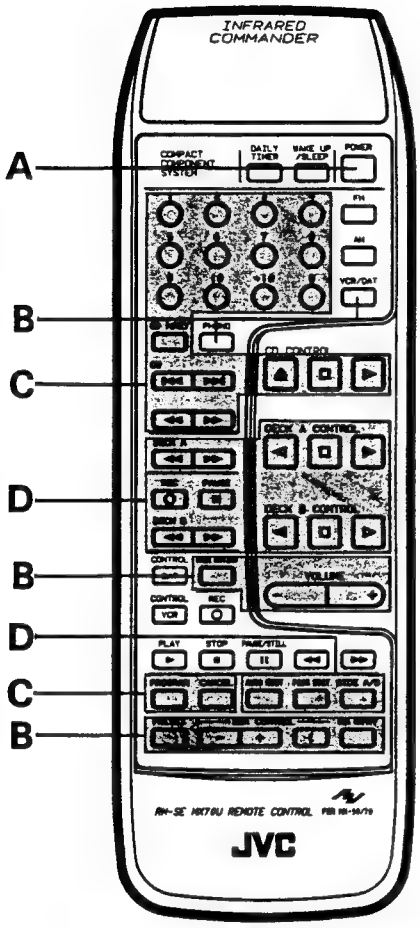
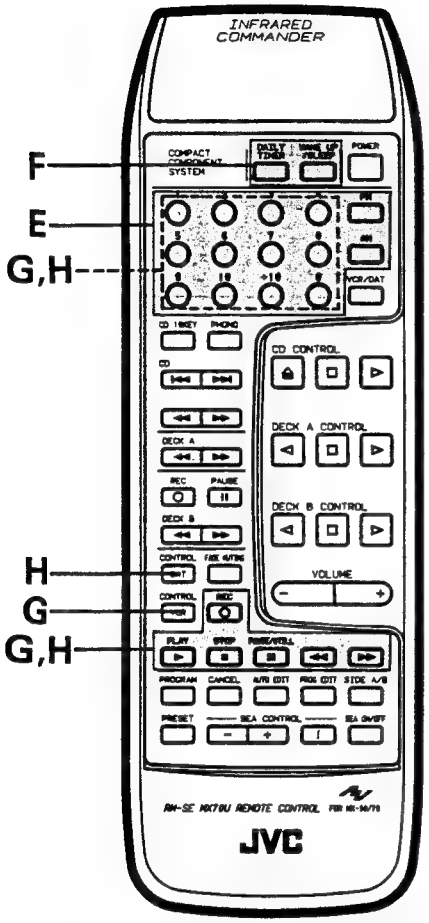
Remote Controller Buttons



Function	Button(s) To Use
A Turn power on or off	
B **Amplifier**	
Adjust volume level	
Lower volume level gradually to 0	
Listen to VCR or DAT	
Listen to records	
Turning SEA Function on or off	
Selecting a frequency range for the SEA Function	
Setting a SEA level	
Using a SEA pattern	
C **CD Player**	
Open and close the disc tray	
Play a CD	
Stop playback of a CD	
Place numeric keys in CD mode	
Select track number	
Scanning through the track numbers	
Search for a certain part of the track	
Program playback order	
Cancelling a program	
D **Tape Deck** (Press buttons corresponding to the deck being used, either deck A or B)	
Play a tape in forward direction	
Play a tape in reverse direction	
Stop playback temporarily (deck B)	
Stop playback	
Fast forwarding or fast rewinding	
Search for beginning of the track while in forward direction	
Search for beginning of the track while in reverse direction	
Recording in forward direction	
Recording in reverse direction	
Pausing recording	
Restarting recording in forward direction	
Restarting recording in reverse direction	
Stopping recording	
Recording from CD in the Auto-Edit mode	
Recording from CD in the Programmed-Edit mode	

Note: Where '+' is indicated, press and hold the first button illustrated, then press the second.



Function	Button(s) To Use
E Tuner	
Selecting Tuner mode / Selecting a band	,
Selecting a preset station	0 ~ 0, 0
F Timers	
Setting/resetting the DAILY timer	
Setting the wake-up/sleep timer	
G VCR	
First select VCR mode	
Recording	+
Play a tape	
Stop playback	
Stop recording or playback temporarily	
Rewind the tape	
Fast forwarding	
Select a TV channel	0 ~ 0, 0

■ When using the remote controller to operate a VCR, point the controller at the VCR.

■ The numeric keys may have different functions depending on the JVC model VCR you have. See your VCR's manual for operating instructions.

H DAT	
First select DAT mode	
Recording	+
Play a tape	
Stop playback	
Stop recording or playback temporarily	
Rewind the tape	
Fast forwarding	
Select a track number for playback	0 ~ 0, 0

■ When using the remote controller to operate a DAT, point the controller at the DAT.

■ The numeric keys may have different functions depending on the JVC model DAT you have. See your DAT's manual for operating instructions.

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Troubleshooting

Symptom	Possible Cause	Action
No sound is heard.	Speakers are connected incorrectly.	Re-connect speakers (see "Connecting the System Component" on page 6).
Impossible to record.	Tape tabs are broken out.	Cover tabs with adhesive tape.
Interference during broadcast.	Antenna is disconnected. The loop antenna is too close to the system.	Re-connect the antenna securely. Change the position and direction of the loop antenna.
CD sound is discontinuous.	The CD is scratched or stained.	Clean or replace the CD.
The Remote Controller cannot be operated.	There is an obstruction blocking the remote sensor on the amplifier.	Remove the obstruction.
	The batteries of the Remote Controller are weak.	Replace the batteries.
The CD disc tray cannot be operated.	The power plug is disconnected.	Connect the power plug securely.
	The POWER button is set to STANDBY.	Set the POWER button to ON.
The CD does not play.	The CD is in the tray upside down.	Put the CD in the tray with the label side facing up.
Operations are disabled.	The built-in microprocessor may malfunction due to external electrical interference.	Unplug the system, then plug it back in.
The cassette holder cannot be opened.	The system was turned off because the timer was operated while the tape was running.	Turn on the system.

Specifications

CD / Amplifier Component

Dimensions	10-7/8 x 6-3/4 x 12-3/8 inches (275 x 170 x 314 mm)
Weight	13.9 lbs (6.3 kg)

Amplifier

Output Power	**35 watts per channel, min. RMS, both channels driven into 4 ohms from 40 Hz to 20 kHz, with no more than 0.9 % total harmonic distortion**
Total Harmonic Distortion at Half-Rated Power	0.07 %
Input Sensitivity / Impedance (1kHz) VCR / DAT	300mV / 75k ohms
PHONO	2.5mV / 50k ohms
SEA Center Frequencies	63, 160, 400, 1k, 2.5k, 6.3k, 16kHz
SEA Control range	± 10dB

Compact Disc Player

Dynamic Range (1kHz)	90dB
Signal-to-Noise Ratio	100dB
Frequency Response	5Hz - 20kHz
Wow and Flutter	Unmeasurable

* Design and specifications subject to change without notice

General

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC120V ∿, 60Hz	117W
Canada	AC120V ∿, 60Hz	130W, 170VA
U.K.	AC240V ∿, 50Hz	267W
Australia	AC240V ∿, 50Hz	267W
Continental Europe	AC230V ∿, 50Hz	138W
Other area	AC 110 / 127 / 220 / 240V ∿, selectable, 50 / 60Hz	138W

Tape Deck / Tuner Conponent

Dimensions	10-7/8 x 6-3/4 x 11 inches (275 x 170 x 279 mm)
Weight	7.5 lbs (3.4 kg)

Tape Deck

Frequency Response	Metal : 30Hz - 17,000Hz CrO2 : 30Hz - 16,000Hz Normal : 30Hz - 15,000Hz
Wow and Flutter' (WRMS)	0.08 %

FM Tuner

Tuning range	87.5 MHz - 108.0 MHz
Usable Sensitivity	0.95μV / 75 ohms (10.8dBf)
Signal-to-Noise Ratio (IHF-A Weighted)	MONO (at 85dBf) 80dB STEREO (at 85dBf) 73dB

AM Tuner

Tuning range	
MW	
U.S.A. and Canada	530 kHz ~ 1710 kHz
U.K., Continental Europe and Australia	522 kHz ~ 1629 kHz
Other area	531 kHz ~ 1602 kHz 530 kHz ~ 1600 kHz
LW	144 kHz ~ 353 kHz

Accessories

FM Feeder antenna	1
AM loop antenna	1
Speaker cable	2
Remote Controller (RM-SE MX70U)	1
Batteries (UM-4 / AAA / R03)	2

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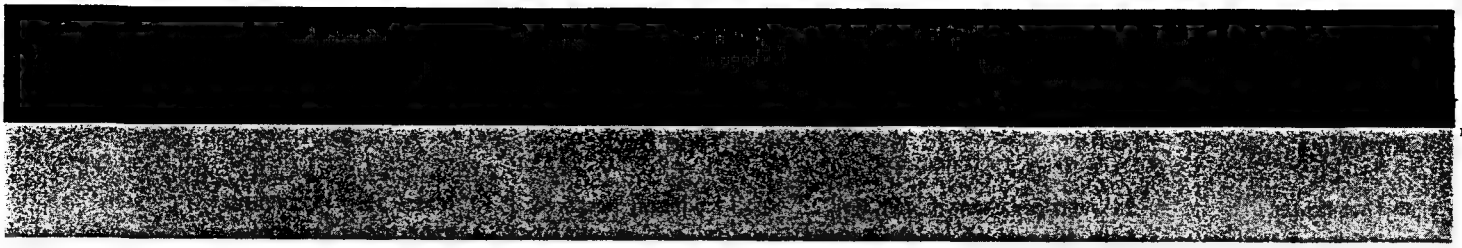
CA-MX50BK



JVC

VICTOR COMPANY OF JAPAN, LIMITED
AUDIO PRODUCTS DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN

(No.20239)

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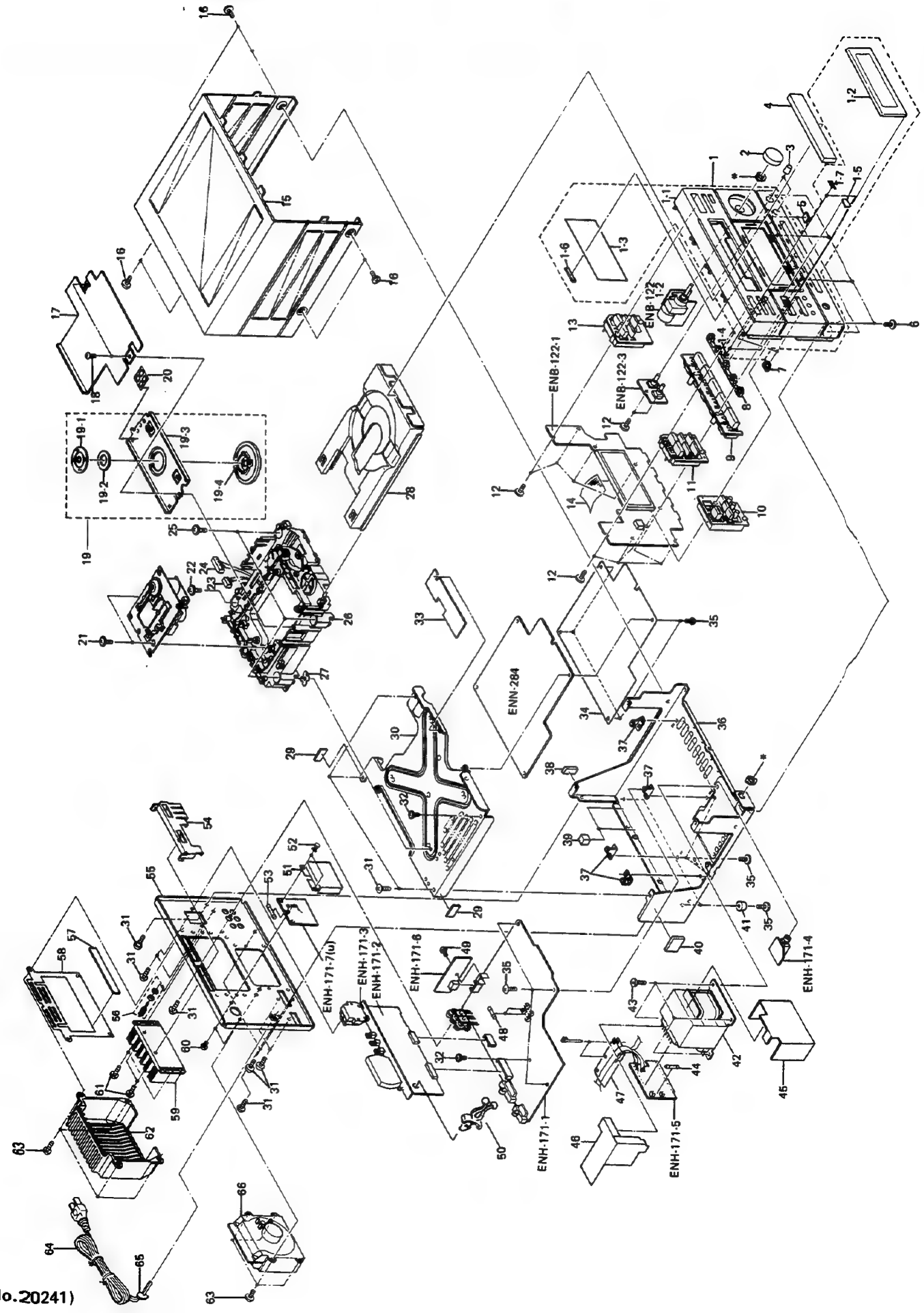
PARTS LIST

Contents

General Exploded View and Parts List



* mark indicates attached part.

■ Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-AXMX50BKE (S	Front Panel Ass'y	1		
	1-1	E12265-004SM	Front Panel	1		
	1-2	E306755-003	Window Screen	1		
	1-3	E406548-001SM	FL Screen	1		
	1-4	E60912-003	Speed Nut	2		
	1-5	E75738-002SM	Remote Plate	1		
	1-6	EXO035005N20S	Spacer	1		
	1-7	PQ42561	JVC Mark	2		
	2	E306549-001SS	Volume Knob	1		
	3	E75737-001	Knob	2		
	4	E306751-002	Fitting	1		
	5	E75896-001SM	Felt Spacer	2	for Foot (Front)	
	6	SDSG3008M	Screw	4		
	7	E75754-001	Indicator	1	SEA, EDIT	
	8	E306580-001	Indicator	1	FUNCTION	
	9	E306558-005	Push Button	1	FUNCTION	
	10	E306562-001	Push Button	1	POWER	
	11	E306554-001	Push Button	1	CD EDIT	
	12	SDSF2608Z	Screw	11		
	13	E306556-001	Push Button	1	CD PLAY	
	14	EWR1TE-20PP	Flat Cable	1	FC511	
	15	E26703-005	Metal Cover	1		
	16	E75440-001	Special Screw	6	for Metal Cover	
	17	E306722-002SM	Cover	1		
	18	SBSF3008M	Screw	2		
	19	E305598-009	Clamper Base Ass'y	1		
	19-1	E74898-003	Yoke	1		
	19-2	E74897-002	Magnet	1		
	19-3	E305594-002	Clamper Base	1		
	19-4	E305595-004	Clamper	1		
	20	E406507-001	Caution Label	1		Except J
	21	E74948-001	Special Screw	2		
	22	E74727-006	Special Screw	1		
	23	EWS254-B218	Socket Wire Ass'y	1	4Pin	
	24	EWS25A-B104	Socket Wire Ass'y	1	10Pin	
	25	E73265-003	Special Screw	3		
	26	————	CD Mechanism Unit Ass'y	1	See page 2-5	
	27	E74767-201SM	Spacer	1		
	28	E11788-005SS	Tray	1		
	29	EXO020010R10S13	Spacer	2		
	30	E12176-004SM	Chassis Base	1		
	31	E73273-006	Special Screw	12		
	32	GBSG3008CC	Screw	2		
	33	E75900-001SM	Spacer	1		
	34	E306855-002SM	Shield Cover	1		
	35	SBSG3008N	Screw	13		
	36	E12175-002SM	Chassis Base	1		
	37	E68587-221SM	Circuit Board Bracket	4		
	38	EXO020010R35S13	Spacer	1		
	39	E3400-442	Felt Spacer	2		
	40	EXO030020R35S13	Spacer	1		
	41	E47227-029	Foot	2	Rear	
⚠	42	ETP1100-39JAJ	Power Transformer	1	T002	J, C
⚠		ETP1100-39FAJ	Power Transformer	1	T002	U
⚠		ETP1100-39EAJ	Power Transformer	1	T002	Except J, C, U, BS
		ETP1100-39EAJBS	Power Transformer	1	T002	BS
	43	E65389-004	Special Screw	4	for Power Transformer	
⚠	44	QMF51U1-4R0S	Fuse	1	F001	J, C
⚠		QMF51E2-2R5J1	Fuse	1	F001	U
⚠		QMF51E2-1R0J1	Fuse	1	F001	Except J, C, U, BS

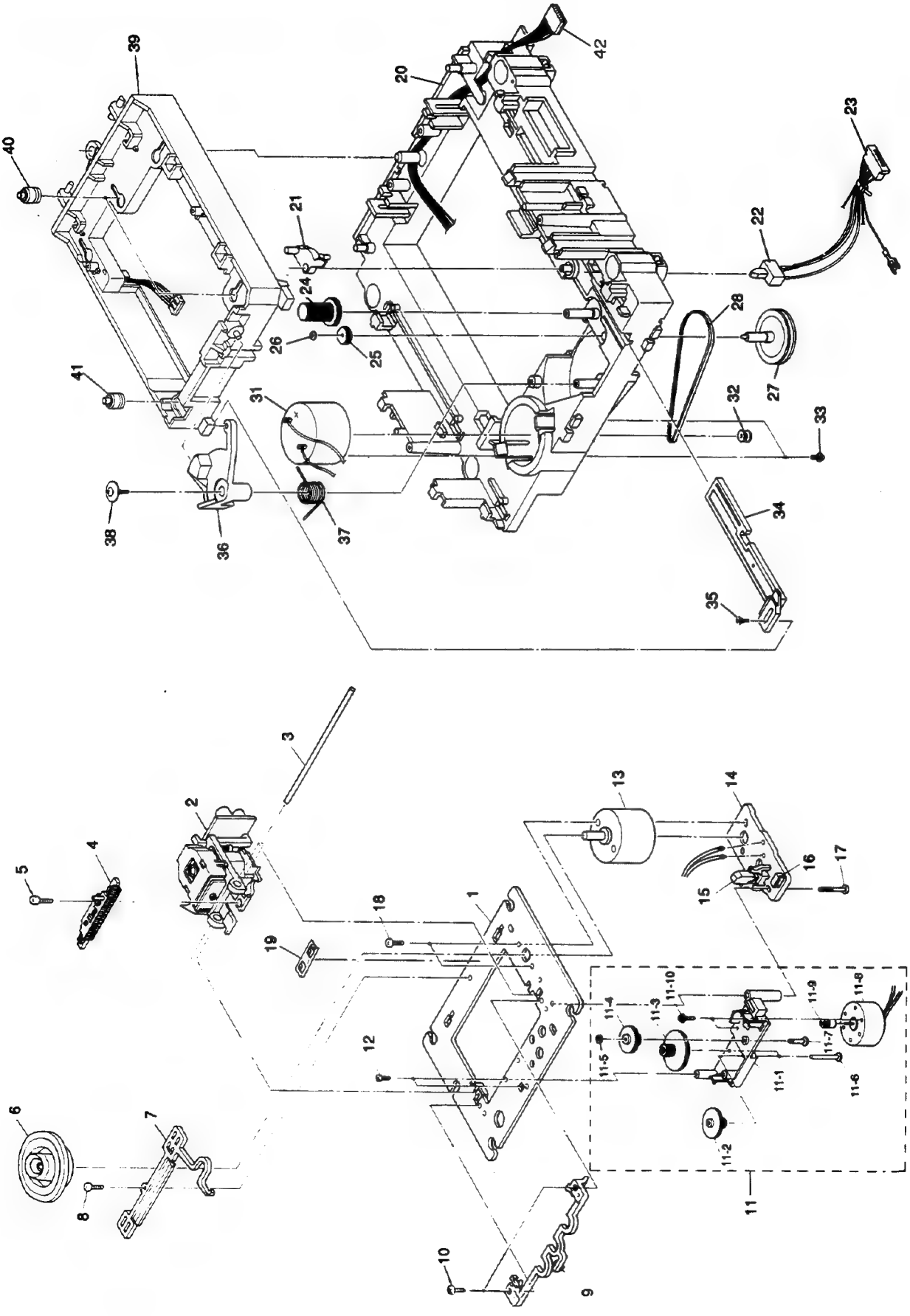
⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
⚠		QMF51E2-1R0J1BS	Fuse	1	F001	BS
	45	E307547-001SM	Protect Sheet	1		
	46	E307476-001SM	Protect Cover	1		Except J
		E307476-002SM	Protect Cover	1		J
	47	E406593-001SM	Protect Cover	1		
⚠	48	QMF51U1-1R6S	Fuse	2	F501, F502	J, C
⚠		QMF51E2-1R25J1	Fuse	2	F501, F502	Except J, C, BS
⚠		QMF51E2-1R2J1BS	Fuse	2	F501, F502	BS
	49	SBST3008M	Screw	1		
	50	E75217-001	Wire Clamp	1		J
		QHW2052-001	Wire Clamp	1		Except J, U
	51	E307477-001SM	Protect Cover	1		U
	52	E48729-010	Plastic Rivet	2		U
⚠	53	QMF51E2-1R0J1	Fuse	1	F002	U
	54	E306754-001SM	Leaf Spring	1		
	55	E26698-022SM	Rear Panel	1		J
		E26698-023SM	Rear Panel	1		C
		E26698-024SM	Rear Panel	1		U
		E26698-025SM	Rear Panel	1		A, BS
		E26698-026SM	Rear Panel	1		E, EF, G, GI, V, VX
	—	E307526-001	Rating Label	1		J
	56	E70078-003	GND Terminal	1		
	57	EXO106010R05S13	Spacer	1		J
	58	E307565-001	Cover	1		J
	59	E306753-001SM	Heat Sink	1		Except J
		E306753-002SM	Heat Sink	1		J
	60	SBST3006M	Screw	2	for Voltage Selector	U
	61	SBSG3008CC	Screw	4		
	62	E26700-002	Rear Cover	1		
	63	SBSG3008M	Screw	8		
⚠	64	QMP1D00-200H	Power Cord	1		J, C
⚠		QMP2560-244	Power Cord	1		A
⚠		QMP3900-200	Power Cord	1		E, EF, G, GI, V, VX
⚠		QMP7520-200	Power Cord	1		U
⚠		QMP9017-008BS	Power Cord	1		BS
⚠	65	QHS3876-162	Cord Stopper	1		Except BS
⚠		QHS3876-162BS	Cord Stopper	1		BS
	66	E26596-004	Ventilator	1		
	—	E61029-009	Number Label	1		Except J
	—	E67199-001	Caution Label	1		J
	—	E65507-001	Caution Label	1		C
	—	E76016-003	Caution Label	1		J
	—	E75803-001	Fuse Caution Label	1		J
	—	E70891-001	Class 1 Label	1		Except J, C
	—	QZL1001-001	UL Label	1		J
	—	E45858-002	CSA Label	1		C
	—	E70028-001	Approval Label	1		E, V

The Marks for Designated Areas

⚠ Safety Parts

J----------the U.S.A
C----------Canada
A----------Australia
E,EF----------Continental Europe
G----------Germany
BS----------the U.K.
GI----------Italy
V----------East Europe
VX----------Poland, Soviet Union and Rumania
U----------Universal Type
No mark indicates all areas.

CD Mechanism Ass'y and Parts List



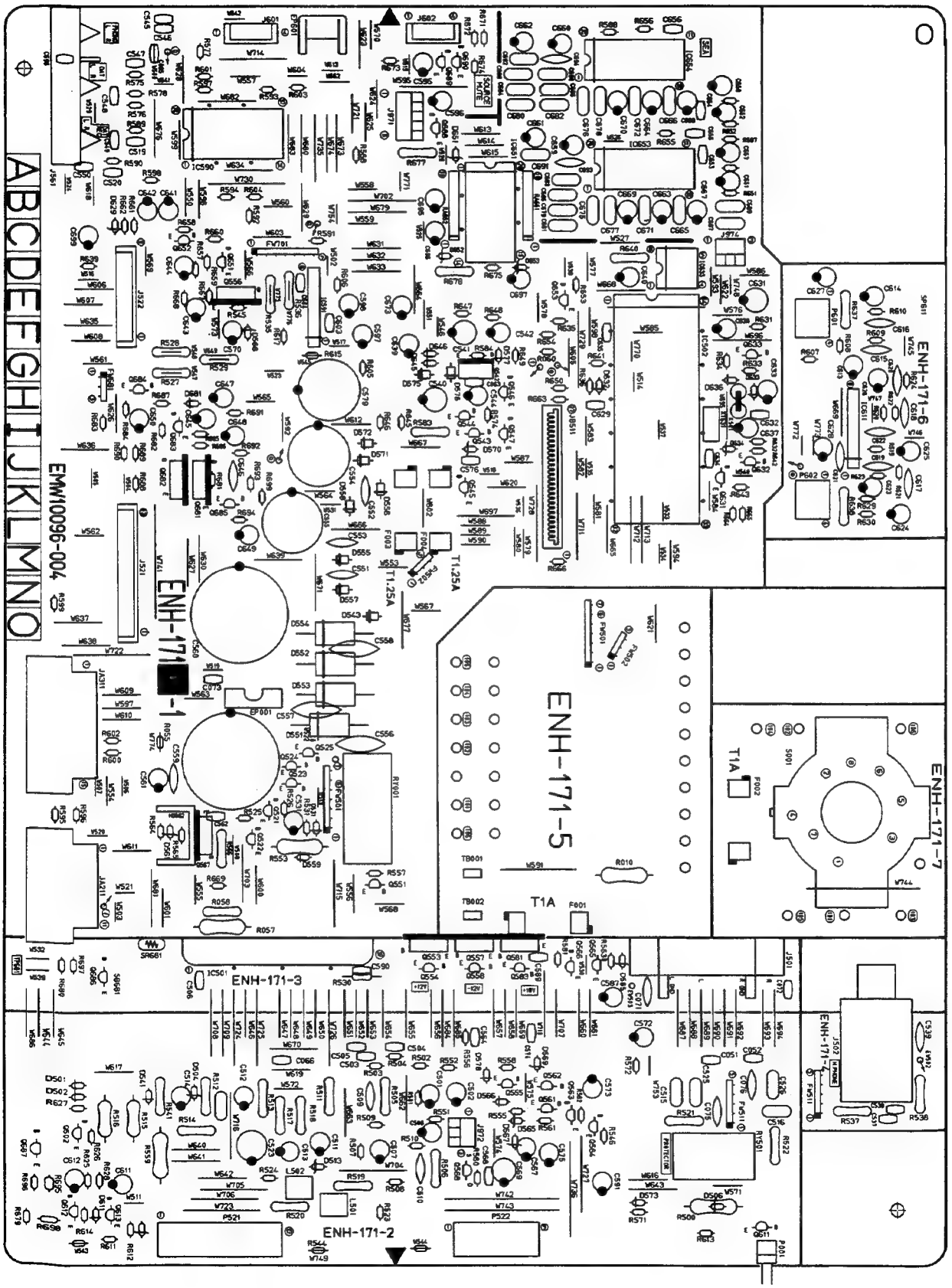
■ Parts List

Item	Part Number	Part Name	Q'ty	Description	Areas
1	E26487-003	Mechanism Base	1		
2	OPTIMA-5S	Pick up Ass'y	1		
3	E74930-003	Shaft	1		
4	E306282-001	Rack Ass'y	1		
5	SPSH2050M	Screw	1		
6	E406064-002	Turn Table Ass'y	1		
7	E306275-003	Support	1		
8	SDST2005Z	Screw	1		
9	E306277-001	Holder	1		
10	SDST2004Z	Screw	2		
11	SE10351-11	Gear Ass'y	1		
11-1	E306276-001	Gear Base	1		
11-2	E75444-001	Gear	1		
11-3	E75443-001	Gear	1		
11-4	E75445-001	Gear	1		
11-5	WDM163550	Slit Washer	1		
11-6	E75494-002	Shaft	1		
11-7	E75494-003	Shaft	2		
11-8	HKN-3A6RDNV	Feed Motor	1		
11-9	E75493-001	Pinion Gear	1		
11-10	LPSH1735Z	Screw	2		
12	E72713-001	Special Screw	2		
13	E74539-001B	Spindle Motor	1		
14	E12114-005 (S)	Circuit Board	1	ENN-187A	
15	ESB1100-005	Leaf Switch	1	S001	
16	EMV5109-006B	6P Plug Ass'y	1	P011	
17	E75832-001	Special Screw	1		
18	SDSP2003N	Screw	2		
20	E12049-002	Loading Base	1		
21	E74888-003	Lock Lever	1		
22	ESS2100-003	Slide Switch	1		
23	EWS246-007	Socket Wire Ass'y	1		
24	E74887-002	Loading Gear	1		
25	E74886-003	Gear	1		
26	E72024-001	Speed Nut	1		
27	E74885-004	Pulley	1		
28	E74347-004	Belt	1		
31	RF-500TB-12560	Loading Motor	1		
32	E75054-001	Motor Pulley	1		
33	SPSK2640Z	Screw	2		
34	E305596-003	Rack	1		
35	E73035-003	Special Screw	1		
36	E305597-005	Elevator	1		
37	E74889-002	Spring	1		
38	E65923-003	Screw	1		
39	E26521-002	Elevator Base Ass'y	1		
40	E75609-001	Insulator	2		
41	E75609-002	Insulator	1		
42	EWS256-B236	Socket Wire Ass'y	1		

Printed Circuit Board Ass'y and Parts List

■ENH-171☐ System Control & Power Amplifier PC Board Ass'y

Note : ENH-171☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENH-171 A	the U.S.A., Canada
ENH-171 B	Universal Type
ENH-171 C	Continental Europe East Europe Poland, Soviet Union and Rumania
ENH-171 DBS	the U.K.
ENH-171 E	Germany, Italy
ENH-171 F	Australia

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION	
	Q502	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q521	2SD1302(S,T)	SILICON	MATSUSHITA
	Q522	2SD1302(S,T)	SILICON	MATSUSHITA
	Q523	DTA114YS	SILICON	ROHM
	Q524	DTC144ES	SILICON	ROHM
	Q525	DTA114YS	SILICON	ROHM
	Q542	2SB1357(E,F)	SILICON	ROHM
	Q543	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q544	DTC114YS	SILICON	ROHM
	Q545	DTA114YS	SILICON	ROHM
	Q546	DTC114YS	SILICON	ROHM
	Q547	DTA144ES	SILICON	ROHM
	Q551	2SC1740S(R,S)	SILICON	ROHM
	Q553	2SB1187(E,F)	SILICON	ROHM
	Q554	2SA564A(Q,R)	SILICON	MATSUSHITA
	Q555	2SC1740S(R,S)	SILICON	ROHM
	Q556	2SD2061(E,F)	SILICON	ROHM
	Q557	2SB1187(E,F)	SILICON	ROHM
	Q558	2SA564A(Q,R)	SILICON	MATSUSHITA
	Q561	DTC144ES	SILICON	ROHM
	Q562	DTC144ES	SILICON	ROHM
	Q563	DTA144ES	SILICON	ROHM
	Q564	DTC114YS	SILICON	ROHM
	Q565	DTC144ES	SILICON	ROHM
	Q566	DTA114YS	SILICON	ROHM
	Q567	2SD1944(J,K)	SILICON	ROHM
	Q568	2SK246(GR,BL)	F.E.T	TOSHIBA
	Q581	2SD2061(E,F)	SILICON	ROHM
	Q583	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q611	2SC1740S(R,S)	SILICON	ROHM
	Q612	2SA933S(R,S)	SILICON	ROHM
	Q613	2SC1740S(R,S)	SILICON	ROHM
	Q631	DTC114YS	SILICON	ROHM
	Q632	DTC114YS	SILICON	ROHM
	Q633	DTC114WS	SILICON	SOD1
	Q651	2SC1740S(R,S)	SILICON	ROHM
	Q652	2SC1740S(R,S)	SILICON	ROHM
	Q653	2SD2144S(VW)	SILICON	ROHM
	Q681	2SB1287	SILICON	ROHM
	Q682	2SD1765	SILICON	ROHM
	Q683	2SC1740S(R,S)	SILICON	ROHM
	Q684	2SA933S(R,S)	SILICON	ROHM
	Q685	2SC1740S(R,S)	SILICON	ROHM
	Q686	2SC1740S(R,S)	SILICON	ROHM
	Q687	2SC1740S(R,S)	SILICON	ROHM
	Q688	DTA144ES	SILICON	ROHM
	Q689	2SD2144S(VW)	SILICON	ROHM
	Q690	2SD2144S(VW)	SILICON	ROHM

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION	
	IC501	STK4161MK5V	I.C.	SANYO
	IC502	UPD75106CW-168	I.C.	NEC
	IC590	TC9163N	I.C.	TOSHIBA
	IC591	BA15218N	I.C.	ROHM
	IC611	VC4580LD	I.C.	DAINICHI
	IC633	LB1639-CV	I.C.	SANYO
	IC651	LC7522	I.C.	SANYO
	IC653	LA3607S	I.C.	SANYO
	IC654	LA3607S	I.C.	SANYO

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	D501	1SS133	SILICON	ROHM	
	D502	1SS133	SILICON	ROHM	
	D504	RD9.1JSB3	ZENER	NEC	
	D506	MTZ24JC	ZENER	ROHM	
	D513	MTZ33JC	ZENER	ROHM	
	D525	1SS133	SILICON	ROHM	
	D531	1SS133	SILICON	ROHM	
	D543	1SR139-200	SILICON	ROHM	
	D551	S3V20F	SILICON	SINDENGEN	A
⚠	D551	30DL2FC	SILICON	NIHONINTER	B
	D551	S3V20F	SILICON	SINDENGEN	C
	D551	S3V20F	SILICON	SINDENGEN	DBS
⚠	D551	30DL2FC	SILICON	NIHONINTER	E
	D551	S3V20F	SILICON	SINDENGEN	F
	D552	S3V20F	SILICON	SINDENGEN	A
⚠	D552	30DL2FC	SILICON	NIHONINTER	B
	D552	S3V20F	SILICON	SINDENGEN	C
	D552	S3V20F	SILICON	SINDENGEN	DBS
⚠	D552	30DL2FC	SILICON	NIHONINTER	E
	D552	S3V20F	SILICON	SINDENGEN	F
	D553	S3V20F	SILICON	SINDENGEN	A
⚠	D553	30DL2FC	SILICON	NIHONINTER	B
	D553	S3V20F	SILICON	SINDENGEN	C
	D553	S3V20F	SILICON	SINDENGEN	DBS
⚠	D553	30DL2FC	SILICON	NIHONINTER	E
	D553	S3V20F	SILICON	SINDENGEN	F
	D554	S3V20F	SILICON	SINDENGEN	A
⚠	D554	30DL2FC	SILICON	NIHONINTER	B
	D554	S3V20F	SILICON	SINDENGEN	C
	D554	S3V20F	SILICON	SINDENGEN	DBS
⚠	D554	30DL2FC	SILICON	NIHONINTER	E
	D554	S3V20F	SILICON	SINDENGEN	F
	D555	1SR139-200	SILICON	ROHM	
	D556	1SR139-200	SILICON	ROHM	
	D557	1SR139-200	SILICON	ROHM	
	D558	1SR139-200	SILICON	ROHM	
	D559	1SS133	SILICON	ROHM	
	D561	MTZ6.2JC	ZENER	ROHM	
	D565	RD12JSB3	ZENER	NEC	
	D566	1SS133	SILICON	ROHM	
	D567	MTZ13JC	ZENER	ROHM	
	D568	MTZ6.2JC	ZENER	ROHM	
	D569	RD12JSB3	ZENER	NEC	
	D570	MTZ10JC	ZENER	ROHM	
	D571	1SR139-200	SILICON	ROHM	
	D572	1SR139-200	SILICON	ROHM	
	D573	1SS133	SILICON	ROHM	
	D575	1SR139-200	SILICON	ROHM	
	D576	1SR139-200	SILICON	ROHM	
	D577	MTZ33JC	ZENER	ROHM	
	D578	1SS133	SILICON	ROHM	
	D585	MTZ11JC	ZENER	ROHM	
	D611	1SS133	SILICON	ROHM	
	D629	MTZ5.6JC	ZENER	ROHM	
	D632	MTZ5.1JB	ZENER	ROHM	
	D633	1SS133	SILICON	ROHM	
	D634	MTZ5.1JB	ZENER	ROHM	
	D636	1SS133	SILICON	ROHM	
	D645	1SS133	SILICON	ROHM	
	D646	1SS133	SILICON	ROHM	
	D651	RD6.8JSB3	ZENER	NEC	
	D652	RD6.8JSB3	ZENER	NEC	
	D653	MTZ5.1JB	ZENER	ROHM	
	D681	1SS133	SILICON	ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C051	QCBB1HK-151	150PF	50V	CERAMIC	C
	C051	QCBB1HK-151	150PF	50V	CERAMIC	DBS
	C051	QCBB1HK-151	150PF	50V	CERAMIC	E
	C052	QCBB1HK-151	150PF	50V	CERAMIC	C
	C052	QCBB1HK-151	150PF	50V	CERAMIC	DBS
	C052	QCBB1HK-151	150PF	50V	CERAMIC	E
	C059	QCZ0202-155	1.5MF	25V	CERAMIC	A
	C059	QCVB1CM-103	0.01MF	16V	CERAMIC	B
	C059	QCVB1CM-103	0.01MF	16V	CERAMIC	C
	C059	QCVB1CM-103	0.01MF	16V	CERAMIC	DBS
	C059	QCVB1CM-103	0.01MF	16V	CERAMIC	E
	C059	QCVB1CM-103	0.01MF	16V	CERAMIC	F
	C063	QCGB1HK-102	1000PF	50V	CERAMIC	
	C501	EEZ5009-106	10MF		ELECTRO	
	C502	EEZ5009-106	10MF		ELECTRO	
	C503	QCBB1HK-101	100PF	50V	CERAMIC	A
	C503	QCBB1HK-101	100PF	50V	CERAMIC	B
	C503	QCBB1HK-101	100PF	50V	CERAMIC	C
	C503	QCBB1HK-101	100PF	50V	CERAMIC	DBS
	C503	QCBB1HK-101	100PF	50V	CERAMIC	F

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C504	QCBB1HK-101	100PF	50V	CERAMIC	A
	C504	QCBB1HK-101	100PF	50V	CERAMIC	B
	C504	QCBB1HK-101	100PF	50V	CERAMIC	C
	C504	QCBB1HK-101	100PF	50V	CERAMIC	DBS
	C504	QCBB1HK-101	100PF	50V	CERAMIC	F
	C505	QCBB1HK-820	82PF	50V	CERAMIC	
	C506	QCBB1HK-820	82PF	50V	CERAMIC	
	C507	EEZ2505-107	100MF		ELECTRO	
	C508	EEZ2505-107	100MF		ELECTRO	
	C509	QCS21HJ-100	10PF	50V	CERAMIC	
	C510	QCS21HJ-100	10PF	50V	CERAMIC	
	C511	QEK51HM-226	22MF	50V	ELECTRO	
	C512	QEK51HM-226	22MF	50V	ELECTRO	
	C513	QETB1HM-476	47MF	50V	ELECTRO	
	C514	QETB1HM-226	22MF	50V	ELECTRO	
	C515	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C516	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C519	QCBB1HK-331	330PF	50V	CERAMIC	C
	C519	QCBB1HK-331	330PF	50V	CERAMIC	DBS
	C519	QCBB1HK-331	330PF	50V	CERAMIC	E
	C520	QCBB1HK-331	330PF	50V	CERAMIC	C
	C520	QCBB1HK-331	330PF	50V	CERAMIC	DBS
	C520	QCBB1HK-331	330PF	50V	CERAMIC	E
	C523	QETB2AM-476	47MF	100V	ELECTRO	
	C525	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C526	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C531	QETB1CM-226	22MF	16V	ELECTRO	
	C537	QCBB1HK-331	330PF	50V	CERAMIC	C
	C537	QCBB1HK-331	330PF	50V	CERAMIC	DBS
	C537	QCBB1HK-331	330PF	50V	CERAMIC	E
	C538	QCBB1HK-331	330PF	50V	CERAMIC	C
	C538	QCBB1HK-331	330PF	50V	CERAMIC	DBS
	C538	QCBB1HK-331	330PF	50V	CERAMIC	E
	C539	QCS21HJ-331	330PF	50V	CERAMIC	
	C540	QETB1HM-227	220MF	50V	ELECTRO	
	C541	QETB1HM-227	220MF	50V	ELECTRO	
	C542	QETB1HM-226	22MF	50V	ELECTRO	
	C544	QETB1HM-226	22MF	50V	ELECTRO	
	C545	QCBB1HK-101	100PF	50V	CERAMIC	
	C546	QCBB1HK-101	100PF	50V	CERAMIC	
	C547	QCBB1HK-221	220PF	50V	CERAMIC	C
	C547	QCBB1HK-221	220PF	50V	CERAMIC	DBS
	C547	QCBB1HK-221	220PF	50V	CERAMIC	E
	C548	QCBB1HK-221	220PF	50V	CERAMIC	C
	C548	QCBB1HK-221	220PF	50V	CERAMIC	DBS
	C548	QCBB1HK-221	220PF	50V	CERAMIC	E
	C549	QCBB1HK-221	220PF	50V	CERAMIC	C
	C549	QCBB1HK-221	220PF	50V	CERAMIC	DBS
	C549	QCBB1HK-221	220PF	50V	CERAMIC	E
	C550	QCBB1HK-221	220PF	50V	CERAMIC	C
	C550	QCBB1HK-221	220PF	50V	CERAMIC	DBS
	C550	QCBB1HK-221	220PF	50V	CERAMIC	E
	C551	QCF21HP-473	0.047MF	50V	CERAMIC	
	C552	QCF21HP-473	0.047MF	50V	CERAMIC	
	C553	QCF21HP-473	0.047MF	50V	CERAMIC	
	C554	QETB1EM-228	2200MF	25V	ELECTRO	
	C555	QETB1EM-338	3300MF	25V	ELECTRO	
	C556	QCE22HP-103	0.01MF	500V	CERAMIC	
	C557	QCE22HP-103	0.01MF	500V	CERAMIC	
	C558	QCE22HP-103	0.01MF	500V	CERAMIC	
	C559	EEW4205-688T	6800MF		ELECTRO	
	C560	EEW4205-688T	6800MF		ELECTRO	
	C561	QETB1CM-226	22MF	16V	ELECTRO	
	C562	QCF21HP-222	2200PF	50V	CERAMIC	
	C564	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C567	QETB1EM-106	10MF	25V	ELECTRO	
	C569	QETB1CM-477	470MF	16V	ELECTRO	
	C570	QERS1CM-476	47MF	16V	ELECTRO	
	C572	QERS1CM-476	47MF	16V	ELECTRO	
	C573	QETB1CM-226	22MF	16V	ELECTRO	
	C574	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C575	QETB1CM-226	22MF	16V	ELECTRO	
	C576	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C579	QETB1EM-338	3300MF	25V	ELECTRO	
	C587	QETB1CM-226	22MF	16V	ELECTRO	
	C589	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C590	QCBB1HK-681	680PF	50V	CERAMIC	C
	C590	QCBB1HK-681	680PF	50V	CERAMIC	DBS
	C590	QCBB1HK-681	680PF	50V	CERAMIC	E
	C591	QETB1CM-476	47MF	16V	ELECTRO	
	C595	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C596	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C597	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C598	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C611	QETB1CM-226	22MF	16V	ELECTRO	
	C612	QETB1CM-476	47MF	16V	ELECTRO	
	C613	QETB1HM-475	4.7MF	50V	ELECTRO	
	C614	QETB1HM-475	4.7MF	50V	ELECTRO	
	C615	QCY21HK-101	100PF	50V	CERAMIC	
	C616	QCY21HK-101	100PF	50V	CERAMIC	
	C617	QCY21HK-182	1800PF	50V	CERAMIC	
	C618	QCY21HK-182	1800PF	50V	CERAMIC	
	C619	QCY21HK-682	6800PF	50V	CERAMIC	
	C620	QCY21HK-682	6800PF	50V	CERAMIC	
	C621	QCS21HJ-101	100PF	50V	CERAMIC	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C622	QCS21HJ-101	100PF	50V	CERAMIC	
	C623	QETB1HM-475	4.7MF	50V	ELECTRO	
	C624	QETB1HM-475	4.7MF	50V	ELECTRO	
	C625	QETB1CM-476	47MF	16V	ELECTRO	
	C626	QETB1CM-476	47MF	16V	ELECTRO	
	C627	QETB1CM-476	47MF	16V	ELECTRO	
	C628	QETB1CM-476	47MF	16V	ELECTRO	
	C631	QETB0JM-477	470MF	6.3V	ELECTRO	
	C632	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C633	QETB1EM-106	10MF	25V	ELECTRO	
	C634	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C635	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C637	QETB1CM-476	47MF	16V	ELECTRO	
	C638	QETB1CM-476	47MF	16V	ELECTRO	
	C639	QETB1HM-105	1MF	50V	ELECTRO	
	C640	QETB1CM-476	47MF	16V	ELECTRO	
	C641	QETB1HM-475	4.7MF	50V	ELECTRO	
	C642	QETB1HM-475	4.7MF	50V	ELECTRO	
	C643	QETB1CM-226	22MF	16V	ELECTRO	
	C644	QETB1CM-226	22MF	16V	ELECTRO	
	C645	QETB1HM-225	2.2MF	50V	ELECTRO	
	C646	QCF21HP-102	1000PF	50V	CERAMIC	
	C647	QETB1HM-474	0.47MF	50V	ELECTRO	
	C648	QETB1HM-225	2.2MF	50V	ELECTRO	
	C649	QETB1CM-476	47MF	16V	ELECTRO	
	C650	QETB0JM-477	470MF	6.3V	ELECTRO	
	C651	QETB1HM-475	4.7MF	50V	ELECTRO	
	C652	QETB1HM-475	4.7MF	50V	ELECTRO	
	C653	QCSB1HJ-470	47PF	50V	CERAMIC	
	C654	QCSB1HJ-470	47PF	50V	CERAMIC	
	C655	QCBB1HK-101	100PF	50V	CERAMIC	
	C656	QCBB1HK-101	100PF	50V	CERAMIC	
	C657	QETB1CM-476	47MF	16V	ELECTRO	
	C658	QETB1CM-476	47MF	16V	ELECTRO	
	C659	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C660	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C661	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C662	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C663	QEK51HM-474G	0.47MF	50V	ELECTRO	
	C664	QEK51HM-474G	0.47MF	50V	ELECTRO	
	C665	QFVB1HJ-124	0.12MF	50V	T.FILM	
	C666	QFVB1HJ-124	0.12MF	50V	T.FILM	
	C667	QEK51HM-224G	0.22MF	50V	ELECTRO	
	C668	QEK51HM-224G	0.22MF	50V	ELECTRO	
	C669	QEK51HM-224G	0.22MF	50V	ELECTRO	
	C670	QEK51HM-224G	0.22MF	50V	ELECTRO	
	C671	QFLB1HJ-473	0.047MF	50V	MYLAR	
	C672	QFLB1HJ-473	0.047MF	50V	MYLAR	
	C673	QETB1HM-475	4.7MF	50V	ELECTRO	
	C675	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C676	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C677	QFLB1HJ-183	0.018MF	50V	MYLAR	
	C678	QFLB1HJ-183	0.018MF	50V	MYLAR	
	C679	QFLB1HJ-393	0.039MF	50V	MYLAR	
	C680	QFLB1HJ-393	0.039MF	50V	MYLAR	
	C681	QFLB1HJ-682	6800PF	50V	MYLAR	
	C682	QFLB1HJ-682	6800PF	50V	MYLAR	
	C683	QFLB1HJ-153	0.015MF	50V	MYLAR	
	C684	QFLB1HJ-153	0.015MF	50V	MYLAR	
	C685	QFLB1HJ-272	2700PF	50V	MYLAR	
	C686	QFLB1HJ-272	2700PF	50V	MYLAR	
	C687	QFLB1HJ-562	5600PF	50V	MYLAR	
	C688	QFLB1HJ-562	5600PF	50V	MYLAR	
	C689	QFLB1HJ-122	1200PF	50V	MYLAR	
	C690	QFLB1HJ-122	1200PF	50V	MYLAR	
	C691	QFLB1HJ-222	2200PF	50V	MYLAR	
	C692	QFLB1HJ-222	2200PF	50V	MYLAR	
	C693	QCS21HJ-471	470PF	50V	CERAMIC	
	C694	QCS21HJ-471	470PF	50V	CERAMIC	
	C695	QETB1AM-107	100MF	10V	ELECTRO	
	C696	QETB1AM-107	100MF	10V	ELECTRO	
	C697	QETB1AM-107	100MF	10V	ELECTRO	
	C698	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C699	QEK51HM-226	22MF	50V	ELECTRO	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
⚠	R010	QRC128K-275EM	2.7M	1/2W	COMPOSI	
	R055	QRD167J-220	22	1/6W	CARBON	
⚠	R057	QRX022J-R22A	0.22	2W	M.FILM	
⚠	R058	QRD14CJ-1R0S	1	1/4W	UNF.CARBON	
⚠	R500	QRG022J-181A	180	2W	O.M.FILM	
⚠	R500	QRG022J-221A	220	2W	O.M.FILM	
⚠	R500	QRG022J-221A	220	2W	O.M.FILM	
⚠	R500	QRG022J-221A	220	2W	O.M.FILM	
⚠	R500	QRG022J-221A	220	2W	O.M.FILM	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	R501	QRD167J-102	1K	1/6W	CARBON	
	R502	QRD167J-102	1K	1/6W	CARBON	
	R503	QRD167J-563	56K	1/6W	CARBON	
	R504	QRD167J-563	56K	1/6W	CARBON	
	R505	ERD141J-271	270	1/4W	CARBON	
	R506	ERD141J-271	270	1/4W	CARBON	
	R507	QRD167J-471	470	1/6W	CARBON	
	R508	QRD167J-471	470	1/6W	CARBON	
	R509	QRD167J-563	56K	1/6W	CARBON	
	R510	QRD167J-563	56K	1/6W	CARBON	
⚠	R511	QRD14CJ-272S	2.7K	1/4W	UNF.CARBON	
⚠	R512	QRD14CJ-272S	2.7K	1/4W	UNF.CARBON	
⚠	R513	QRD14CJ-272S	2.7K	1/4W	UNF.CARBON	
⚠	R514	QRD14CJ-272S	2.7K	1/4W	UNF.CARBON	
⚠	R515	QRX012J-R22AM	0.22	1W	M.FILM	
⚠	R516	QRX012J-R22AM	0.22	1W	M.FILM	
⚠	R517	QRZ0077-101	100	1/4W	FUSIBLE	
⚠	R518	QRD14CJ-100S	10	1/4W	UNF.CARBON	A
⚠	R518	QRZ0077-100	10	1/4W	FUSIBLE	B
⚠	R518	QRZ0077-100	10	1/4W	FUSIBLE	C
⚠	R518	QRZ0077-100	10	1/4W	FUSIBLE	DBS
⚠	R518	QRZ0077-100	10	1/4W	FUSIBLE	E
⚠	R518	QRZ0077-100	10	1/4W	FUSIBLE	F
⚠	R519	QRD14CJ-100S	10	1/4W	UNF.CARBON	
⚠	R520	QRD14CJ-100S	10	1/4W	UNF.CARBON	
⚠	R521	QRD14CJ-100S	10	1/4W	UNF.CARBON	
⚠	R522	QRD14CJ-100S	10	1/4W	UNF.CARBON	
	R523	QRD167J-823	82K	1/6W	CARBON	
	R524	QRD167J-104	100K	1/6W	CARBON	
	R525	QRD167J-562	5.6K	1/6W	CARBON	
	R526	QRD167J-562	5.6K	1/6W	CARBON	
⚠	R527	QRD14CJ-3R3S	3.3	1/4W	UNF.CARBON	A
⚠	R527	QRD14CJ-2R7S	2.7	1/4W	UNF.CARBON	B
⚠	R527	QRD14CJ-2R7S	2.7	1/4W	UNF.CARBON	C
⚠	R527	QRD14CJ-2R7S	2.7	1/4W	UNF.CARBON	DBS
⚠	R527	QRD14CJ-2R7S	2.7	1/4W	UNF.CARBON	E
⚠	R527	QRD14CJ-2R7S	2.7	1/4W	UNF.CARBON	F
⚠	R528	QRD14CJ-3R3S	3.3	1/4W	UNF.CARBON	A
⚠	R530	QRD145J-100S	10	1/4W	UNF.CARBON	
	R531	QRD167J-183	18K	1/6W	CARBON	
⚠	R535	QRD145J-3R3S	3.3	1/4W	UNF.CARBON	A
⚠	R536	QRD145J-3R3S	3.3	1/4W	UNF.CARBON	A
	R537	QRD12CJ-331S	330	1/2W	R.NETWORK	
	R538	QRD12CJ-331S	330	1/2W	R.NETWORK	
⚠	R541	QRD14CJ-100S	10	1/4W	UNF.CARBON	A
⚠	R541	QRZ0077-100	10	1/4W	FUSIBLE	B
⚠	R541	QRZ0077-100	10	1/4W	FUSIBLE	C
⚠	R541	QRZ0077-100	10	1/4W	FUSIBLE	DBS
⚠	R541	QRZ0077-100	10	1/4W	FUSIBLE	E
⚠	R541	QRZ0077-100	10	1/4W	FUSIBLE	F
	R545	QRD167J-102	1K	1/6W	CARBON	
	R546	QRD167J-222	2.2K	1/6W	CARBON	
	R551	QRD167J-104	100K	1/6W	CARBON	
	R552	QRD167J-104	100K	1/6W	CARBON	
⚠	R553	QRG022J-181A	180	2W	O.M.FILM	
	R555	QRD167J-103	10K	1/6W	CARBON	
	R556	QRD167J-152	1.5K	1/6W	CARBON	
	R557	QRD167J-222	2.2K	1/6W	CARBON	
	R558	QRD167J-472	4.7K	1/6W	CARBON	
⚠	R559	QRG022J-122A	1.2K	2W	O.M.FILM	
	R560	QRD167J-271	270	1/6W	CARBON	
	R561	QRD167J-103	10K	1/6W	CARBON	
	R562	QRD167J-103	10K	1/6W	CARBON	
	R563	QRD167J-103	10K	1/6W	CARBON	
	R564	QRD167J-103	10K	1/6W	CARBON	
	R565	QRD167J-103	10K	1/6W	CARBON	
⚠	R566	QRD14CJ-4R7S	4.7	1/4W	UNF.CARBON	A
⚠	R566	QRZ0077-4R7	4.7	1/4W	FUSIBLE	B
⚠	R566	QRZ0077-4R7	4.7	1/4W	FUSIBLE	C
⚠	R566	QRZ0077-4R7	4.7	1/4W	FUSIBLE	DBS
⚠	R566	QRZ0077-4R7	4.7	1/4W	FUSIBLE	E
⚠	R566	QRZ0077-4R7	4.7	1/4W	FUSIBLE	F
	R571	QRD167J-393	39K	1/6W	CARBON	
	R574	QRD167J-104	100K	1/6W	CARBON	
	R575	QRD167J-473	47K	1/6W	CARBON	
	R576	QRD167J-473	47K	1/6W	CARBON	
	R577	QRD167J-473	47K	1/6W	CARBON	
	R578	QRD167J-473	47K	1/6W	CARBON	
	R581	QRD167J-332	3.3K	1/6W	CARBON	
	R583	QRD12CJ-4R7S	4.7	1/2W	R.NETWORK	
	R584	QRD167J-332	3.3K	1/6W	CARBON	
	R587	QRD167J-104	100K	1/6W	CARBON	
	R588	QRD167J-104	100K	1/6W	CARBON	
	R589	QRD167J-562	5.6K	1/6W	CARBON	
	R590	QRD167J-562	5.6K	1/6W	CARBON	
	R591	QRD167J-122	1.2K	1/6W	CARBON	
	R592	QRD167J-122	1.2K	1/6W	CARBON	
	R593	QRD167J-103	10K	1/6W	CARBON	
	R594	QRD167J-103	10K	1/6W	CARBON	
	R595	QRD167J-152	1.5K	1/6W	CARBON	
	R596	QRD167J-152	1.5K	1/6W	CARBON	
	R597	QRD167J-103	10K	1/6W	CARBON	
	R598	QRD167J-103	10K	1/6W	CARBON	
	R599	QRD167J-392	3.9K	1/6W	CARBON	
	R600	QRD167J-392	3.9K	1/6W	CARBON	

⚠ :SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	R601	QRD167J-392	3.9K	1/6W	CARBON	
	R602	QRD167J-392	3.9K	1/6W	CARBON	
	R603	QRD167J-104	100K	1/6W	CARBON	
	R604	QRD167J-104	100K	1/6W	CARBON	
	R605	QRD167J-474	470K	1/6W	CARBON	
	R606	QRD167J-474	470K	1/6W	CARBON	
	R607	QRD167J-222	2.2K	1/6W	CARBON	
	R608	QRD167J-222	2.2K	1/6W	CARBON	
	R609	QRD167J-473	47K	1/6W	CARBON	
	R610	QRD167J-473	47K	1/6W	CARBON	
	R611	QRD167J-103	10K	1/6W	CARBON	
	R612	QRD167J-222	2.2K	1/6W	CARBON	
	R613	QRD167J-152	1.5K	1/6W	CARBON	
	R614	QRD167J-104	100K	1/6W	CARBON	
	R619	QRD167J-102	1K	1/6W	CARBON	
	R620	QRD167J-102	1K	1/6W	CARBON	
	R621	QRD167J-393	39K	1/6W	CARBON	
	R622	QRD167J-393	39K	1/6W	CARBON	
	R623	QRD167J-474	470K	1/6W	CARBON	
	R624	QRD167J-474	470K	1/6W	CARBON	
	R625	QRD167J-104	100K	1/6W	CARBON	
	R626	QRD167J-393	39K	1/6W	CARBON	
	R627	QRD167J-103	10K	1/6W	CARBON	
	R628	QRD167J-103	10K	1/6W	CARBON	
	R629	QRD167J-104	100K	1/6W	CARBON	
	R630	QRD167J-104	100K	1/6W	CARBON	
	R631	QRD167J-471	470	1/6W	CARBON	
	R632	QRD167J-102	1K	1/6W	CARBON	
	R633	QRD167J-472	4.7K	1/6W	CARBON	
	R634	QRD167J-223	22K	1/6W	CARBON	
	R635	QRD167J-153	15K	1/6W	CARBON	
	R636	QRD167J-104	100K	1/6W	CARBON	
⚠	R637	QRD14CJ-221S	220	1/4W	UNF.CARBON	
⚠	R638	QRD14CJ-221S	220	1/4W	UNF.CARBON	
	R639	QRD167J-271	270	1/6W	CARBON	
⚠	R640	QRD14CJ-100S	10	1/4W	UNF.CARBON	
	R641	QRD167J-102	1K	1/6W	CARBON	
	R642	QRD167J-102	1K	1/6W	CARBON	
	R643	QRD167J-103	10K	1/6W	CARBON	
	R645	QRD167J-103	10K	1/6W	CARBON	
	R646	QRD167J-103	10K	1/6W	CARBON	
	R647	QRD167J-123	12K	1/6W	CARBON	
	R648	QRD167J-473	47K	1/6W	CARBON	
	R649	QRD167J-102	1K	1/6W	CARBON	
	R650	QRD167J-271	270	1/6W	CARBON	
	R651	QRD167J-113	11K	1/6W	CARBON	
	R652	QRD167J-113	11K	1/6W	CARBON	
	R653	QRD167J-103	10K	1/6W	CARBON	
	R654	QRD167J-103	10K	1/6W	CARBON	
	R655	QRD167J-103	10K	1/6W	CARBON	
	R656	QRD167J-103	10K	1/6W	CARBON	
	R657	QRD167J-103	10K	1/6W	CARBON	
	R658	QRD167J-103	10K	1/6W	CARBON	
	R659	QRD167J-105	1M	1/6W	CARBON	
	R660	QRD167J-105	1M	1/6W	CARBON	
	R661	QRD167J-153	15K	1/6W	CARBON	
	R662	QRD167J-153	15K	1/6W	CARBON	
	R663	QRD167J-271	270	1/6W	CARBON	
	R664	QRD167J-271	270	1/6W	CARBON	
	R665	QRD167J-271	270	1/6W	CARBON	
	R666	QRD167J-271	270	1/6W	CARBON	
	R667	QRD167J-103	10K	1/6W	CARBON	
	R668	QRD167J-103	10K	1/6W	CARBON	
	R669	QRD167J-271	270	1/6W	CARBON	
	R671	QRD167J-103	10K	1/6W	CARBON	
	R672	QRD167J-103	10K	1/6W	CARBON	
	R673	QRD167J-472	4.7K	1/6W	CARBON	
	R674	QRD167J-472	4.7K	1/6W	CARBON	
	R675	QRD167J-181	180	1/6W	CARBON	
⚠	R677	QRD14CJ-181S	180	1/4W	UNF.CARBON	
⚠	R678	QRD14CJ-181S	180	1/4W	UNF.CARBON	
	R679	QRD167J-331	330	1/6W	CARBON	
	R680	QRD167J-391	390	1/6W	CARBON	
	R681	QRD167J-103	10K	1/6W	CARBON	
	R682	QRD167J-102	1K	1/6W	CARBON	
	R683	QRD167J-153	15K	1/6W	CARBON	A
	R683	QRD167J-103	10K	1/6W	CARBON	B
	R683	QRD167J-103	10K	1/6W	CARBON	C
	R683	QRD167J-103	10K	1/6W	CARBON	DBS
	R683	QRD167J-103	10K	1/6W	CARBON	E
	R683	QRD167J-103	10K	1/6W	CARBON	F
	R684	QRD167J-391	390	1/6W	CARBON	
	R685	QRD167J-103	10K	1/6W	CARBON	
	R686	QRD167J-474	470K	1/6W	CARBON	
	R687	QRD167J-101	100	1/6W	CARBON	
	R688	QRD167J-103	10K	1/6W	CARBON	
	R689	QRD167J-102	1K	1/6W	CARBON	
	R690	QRD167J-103	10K	1/6W	CARBON	
	R691	QRD167J-332	3.3K	1/6W	CARBON	
	R692	QRD167J-562	5.6K	1/6W	CARBON	
	R693	QRD167J-562	5.6K	1/6W	CARBON	
	R694	QRD167J-333	33K	1/6W	CARBON	
	R695	QRD167J-392	3.9K	1/6W	CARBON	
	R696	QRD167J-392	3.9K	1/6W	CARBON	
	R697	QRD167J-220	22	1/6W	CARBON	
	R698	QRD167J-680	68	1/6W	CARBON	
	R699	QRD167J-333	33K	1/6W	CARBON	
	RA651	QRB099J-474	470K	1/10W	R.NETWORK	
	RA652	QRB099J-474	470K	1/10W	R.NETWORK	

⚠ :SAFETY PARTS

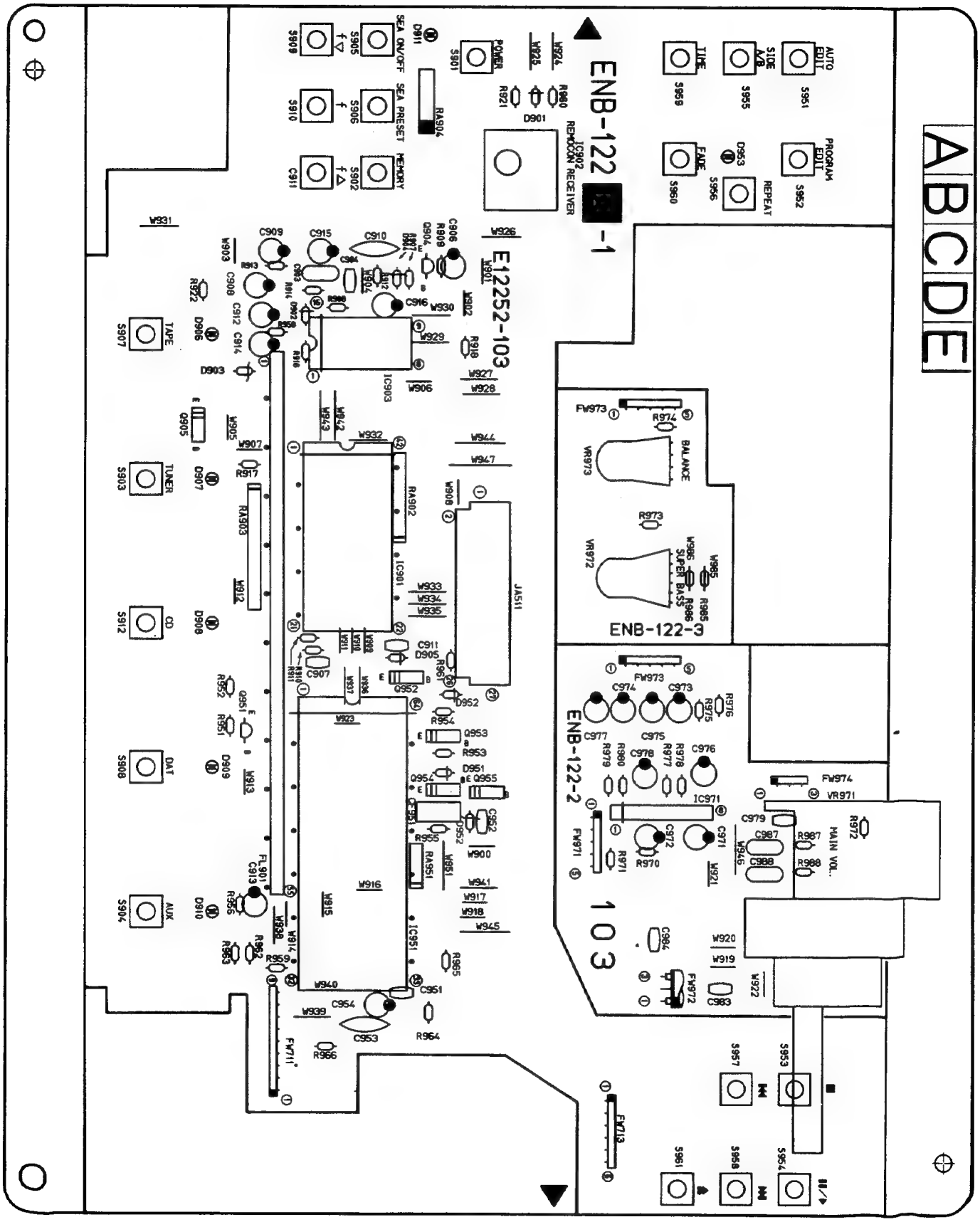
Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		EMW10096-004	CIRCUIT BOARD	A
		EMW10096-004	CIRCUIT BOARD	B
		EMW10096-004	CIRCUIT BOARD	C
		EMW10096-004BS	CIRCUIT BOARD	DBS
		EMW10096-004	CIRCUIT BOARD	E
		EMW10096-004	CIRCUIT BOARD	F
	J501	EMB90TV-401A	SPEAKER TERMINAL	
	J502	QMS6312-025	HEADPHONE JACK	
	J521	EMV5125-013	PLUG ASSY(13PIN)	
	J522	EMV5125-009	PLUG ASSY(9PIN)	
	J561	EMN00TV-604A	6P PIN JACK	
	J601	EMV5125-004	PLUG ASSY(4PIN)	
	J602	EMV5125-004	PLUG ASSY(4PIN)	
	J971	VMC0107-005	CONNECT TERMINAL(5PIN)	
	J972	VMC0107-003	CONNECT TERMINAL(3PIN)	
	J974	VMC0107-003	CONNECT TERMINAL(3PIN)	
	K501	ENZ8101-007	INDUCTOR	
	L501	EQL0001-R45	INDUCTOR	
	L502	EQL0001-R45	INDUCTOR	
	P001	QMV5004-002	PLUG ASSY(2PIN)	
	P521	EMV7125-013R	CONNECTOR(13PIN)	
	P522	EMV7125-009R	CONNECTOR(9PIN)	
	P601	EMV7125-004R	CONNECTOR(4PIN)	
	P602	EMV7125-004R	CONNECTOR(4PIN)	
⚠	S001	QSR0085-018	VOLTAGE SELECTOR	B
	EP001	E70859-001	EARTH PLATE	
	EP601	E70225-001	EARTH PLATE	
	EW502	EWT011-092	TERMINAL WIRE	
	FS531	E3400-431	SPACER	
	FS577	E3400-431	SPACER	
	FT001	VMZ0087-001	FUSE CLIP	
	FT002	VMZ0087-001	FUSE CLIP	
	FT003	VMZ0087-001	FUSE CLIP	
	FT004	VMZ0087-001	FUSE CLIP	
	FT005	VMZ0087-001	FUSE CLIP	
	FT006	VMZ0087-001	FUSE CLIP	
	FT007	VMZ0087-001	FUSE CLIP	B
	FT008	VMZ0087-001	FUSE CLIP	B
	FW501	EWR37B-20SST	FLAT WIRE(7PIN)	A
	FW501	EWR36B-20SST	FLAT WIRE(6PIN)	B
	FW501	EWR36B-20SST	FLAT WIRE(6PIN)	C
	FW501	EWR36B-20SST	FLAT WIRE(6PIN)	DBS
	FW501	EWR36B-20SST	FLAT WIRE(6PIN)	E
	FW501	EWR36B-20SST	FLAT WIRE(6PIN)	F
	FW502	EWR33B-20SST	FLAT WIRE(3PIN)	
	FW511	EWR35B-45SST	FLAT WIRE(5PIN)	
	FW681	EWR33B-13LST	FLAT WIRE(3PIN)	
	FW701	EWR37B-25LST	FLAT WIRE(7PIN)	
	JA211	EMV7127-011	CONNECTOR(11PIN)	
	JA311	EMV7127-015	CONNECTOR(15PIN)	
	JB511	EMV7123-027	CONNECTOR(27PIN)	
	LB001	E61380-010	FUSE LABEL	A
	LB001	E67132-T2R5	FUSE LABEL	B
	LB501	E61380-032	FUSE LABEL	A
	LB502	E61380-032	FUSE LABEL	A
	RY001	ESK1D12-211M	RELAY	
	RY501	ESK8D24-212	RELAY	
	SB681	E406576-002	BRACKET	
	SP567	E48269-001	SPACER	B
	SP567	E48269-001	SPACER	C
	SP567	E48269-001	SPACER	DBS
	SP567	E48269-001	SPACER	E
	SP567	E48269-001	SPACER	F
	SP611	E406238-002	SHIELD PLATE	
	SR681	ERT-D2WHK202S	NEGATIVE THERMISTOR	
	TB001	E65508-002	TAB	
	TB002	E65508-002	TAB	
	XT631	ECX0004-194KM	RESONATOR	

⚠ : SAFETY PARTS

■ENB-122□ CD Control & FL Display PC Board Ass'y

Note : ENB-122 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	·Designated Areas
ENB-122 [A]	the U.S.A., Canada
ENB-122 [B]	Australia, East Europe Continental Europe Poland, Soviet Union and Rumania Universal Type
ENB-122 [C]	Germany, Italy
ENB-122 [D]	the U.K.

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q904	2SC1740S(R,S)	SILICON	ROHM	
	Q905	DTC114YFF	SILICON	ROHM	
	Q951	DTA114YS	SILICON	ROHM	
	Q952	DTA114YFF	SILICON	ROHM	
	Q953	DTA114YFF	SILICON	ROHM	
	Q954	DTC114YFF	SILICON	ROHM	
	Q955	DTC144EFF	SILICON	ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC901	LC7565	I.C.	SANYO	
	IC902	GP1U501X	I.C.	SHARP	
	IC903	XR-1091DCP	I.C.	EXAR JAPAN	
	IC951	HD614081SB22	I.C.	HITACHI	
	IC971	BA15218N	I.C.	ROHM	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	D901	1SS133	SILICON	ROHM	
	D902	1SS133	SILICON	ROHM	
	D903	MTZ10JC	ZENER	ROHM	
	D904	MTZ5.6JC	ZENER	ROHM	
	D905	1SS133	SILICON	ROHM	
	D906	SLH-34VC3F	L.E.D.	ROHM	
	D907	SLH-34VC3F	L.E.D.	ROHM	
	D908	SLH-34VC3F	L.E.D.	ROHM	
	D909	SLH-34VC3F	L.E.D.	ROHM	
	D910	SLH-34VC3F	L.E.D.	ROHM	
	D911	SLH-34VC3F	L.E.D.	ROHM	A
	D911	SLH-34VC3F	L.E.D.	ROHM	B
	D911	SLH-34VC3F	L.E.D.	ROHM	C
	D911	SLA-580LT3F	L.E.D.		D
	D951	1SS133	SILICON	ROHM	
	D952	1SS133	SILICON	ROHM	
	D953	SLH-34VC3F	L.E.D.	ROHM	
	D962	MTZ5.6JC	ZENER	ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C903	QFV81HJ-104	0.1MF	50V	T.FILM	
	C904	QCGB1HK-102	1000PF	50V	CERAMIC	
	C906	QEKS1EM-475G	4.7MF	25V	ELECTRO	
	C907	QCBB1HK-151	150PF	50V	CERAMIC	
	C908	QEKS1EM-475G	4.7MF	25V	ELECTRO	
	C909	QEKS1HM-474G	0.47MF	50V	ELECTRO	
	C910	QCF21HP-103	0.01MF	50V	CERAMIC	
	C911	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C912	QEKS1HM-226	22MF	50V	ELECTRO	
	C913	QEKS1HM-475	4.7MF	50V	ELECTRO	
	C914	QEKS1HM-475	4.7MF	50V	ELECTRO	
	C915	QERS0JM-107	100MF	6.3V	ELECTRO	
	C916	QETB1AM-107	100MF	10V	ELECTRO	
	C951	QCSB1HJ-470	47PF	50V	CERAMIC	
	C952	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C953	QCF21HP-473	0.047MF	50V	CERAMIC	
	C954	QETB1AM-107	100MF	10V	ELECTRO	
	C971	QETB1EM-106	10MF	25V	ELECTRO	
	C972	QETB1EM-106	10MF	25V	ELECTRO	
	C973	QETB1AM-476	47MF	10V	ELECTRO	
	C974	QETB1AM-476	47MF	10V	ELECTRO	
	C975	QETB1HM-474	0.47MF	50V	ELECTRO	
	C976	QETB1HM-105	1MF	50V	ELECTRO	
	C977	QETB1HM-474	0.47MF	50V	ELECTRO	
	C978	QETB1HM-105	1MF	50V	ELECTRO	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C979	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C983	QCBB1HK-101	100PF	50V	CERAMIC	C
	C984	QCBB1HK-101	100PF	50V	CERAMIC	C

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	R907	QRD167J-562	5.6K	1/6W	CARBON	
	R908	QRD167J-152	1.5K	1/6W	CARBON	
	R909	QRD167J-474	470K	1/6W	CARBON	
	R910	QRD167J-183	18K	1/6W	CARBON	
	R911	QRD167J-274	270K	1/6W	CARBON	
	R912	QRD167J-473	47K	1/6W	CARBON	
	R913	QRD167J-473	47K	1/6W	CARBON	
	R914	QRD167J-103	10K	1/6W	CARBON	
	R916	QRD167J-473	47K	1/6W	CARBON	
	R917	QRD167J-104	100K	1/6W	CARBON	
	R918	QRD167J-271	270	1/6W	CARBON	
	R921	QRD167J-181	180	1/6W	CARBON	
	R922	QRD167J-271	270	1/6W	CARBON	
	R951	QRD167J-104	100K	1/6W	CARBON	
	R952	QRD167J-104	100K	1/6W	CARBON	
	R953	QRD167J-103	10K	1/6W	CARBON	
	R954	QRD167J-103	10K	1/6W	CARBON	
	R955	QRD167J-105	1M	1/6W	CARBON	
	R956	QRD167J-103	10K	1/6W	CARBON	
	R958	QRD167J-103	10K	1/6W	CARBON	
	R959	QRD167J-332	3.3K	1/6W	CARBON	
	R960	QRD167J-271	270	1/6W	CARBON	
	R961	QRD167J-271	270	1/6W	CARBON	
	R962	QRD167J-102	1K	1/6W	CARBON	
	R963	QRD167J-102	1K	1/6W	CARBON	
	R964	QRD167J-102	1K	1/6W	CARBON	
	R965	QRD167J-102	1K	1/6W	CARBON	
	R970	QRD167J-221	220	1/6W	CARBON	
	R971	QRD167J-221	220	1/6W	CARBON	
	R972	QRD167J-221	220	1/6W	CARBON	
	R973	QRD167J-183	18K	1/6W	CARBON	
	R974	QRD167J-183	18K	1/6W	CARBON	
	R975	QRD167J-153	15K	1/6W	CARBON	
	R976	QRD167J-153	15K	1/6W	CARBON	
	R977	QRD167J-204	200K	1/6W	CARBON	
	R978	QRD167J-560	56	1/6W	CARBON	
	R979	QRD167J-204	200K	1/6W	CARBON	
	R980	QRD167J-560	56	1/6W	CARBON	
	RA902	QRB099J-104	100K	1/10W	R.NETWORK	
	RA903	QRB139J-104	100K	1/10W	R.NETWORK	
	RA904	QRB045J-103	10K	1/8W	R.NETWORK	
	RA951	QRB049J-473	47K	1/10W	R.NETWORK	
	VR971	QVDB91B-E15F	100K		VARIABLE	
	VR972	QVCBB4A-E54B	50K		VARIABLE	
	VR973	QVCA84W-E15B	100K		VARIABLE	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E12252-103	CIRCUIT BOARD	
	S901	ESP0001-018	TACT SWITCH (POWER)	
	S902	ESP0001-018	TACT SWITCH (MEMORY)	
	S903	ESP0001-018	TACT SWITCH (TUNER)	
	S904	ESP0001-018	TACT SWITCH (PHONO)	
	S905	ESP0001-018	TACT SWITCH (SEA)	
	S906	ESP0001-018	TACT SWITCH (SEA PRESET)	
	S907	ESP0001-018	TACT SWITCH (TAPE)	
	S908	ESP0001-018	TACT SWITCH (VCR/DAT)	
	S909	ESP0001-018	TACT SWITCH (f▽)	
	S910	ESP0001-018	TACT SWITCH (f)	
	S911	ESP0001-018	TACT SWITCH (f△)	
	S912	ESP0001-018	TACT SWITCH (CD)	
	S951	ESP0001-018	TACT SWITCH (AUTO EDIT)	
	S952	ESP0001-018	TACT SWITCH (PROG EDIT)	
	S953	ESP0001-018	TACT SWITCH (STOP CLR)	
	S954	ESP0001-018	TACT SWITCH (PLAY PAUSE)	
	S955	ESP0001-018	TACT SWITCH (SIDE A/B)	
	S956	ESP0001-018	TACT SWITCH (REPEAT)	
	S957	ESP0001-018	TACT SWITCH (◀◀)	
	S958	ESP0001-018	TACT SWITCH (DPI)	
	S959	ESP0001-018	TACT SWITCH (TIME)	
	S960	ESP0001-018	TACT SWITCH (FADE)	
	S961	ESP0001-018	TACT SWITCH (OPEN/CLOSE)	
	CF951	ECX0004-194KM	RESONATOR	
	FL901	ELU0001-102	FL TUBE	
	FS901	E3400-450	FELT SPACER	
	FS902	E3400-450	FELT SPACER	
	FW711	EWR39B-25LST	FLAT WIRE (9PIN)	
	FW713	EWR36B-25LST	FLAT WIRE (6PIN)	

⚠ : SAFETY PARTS

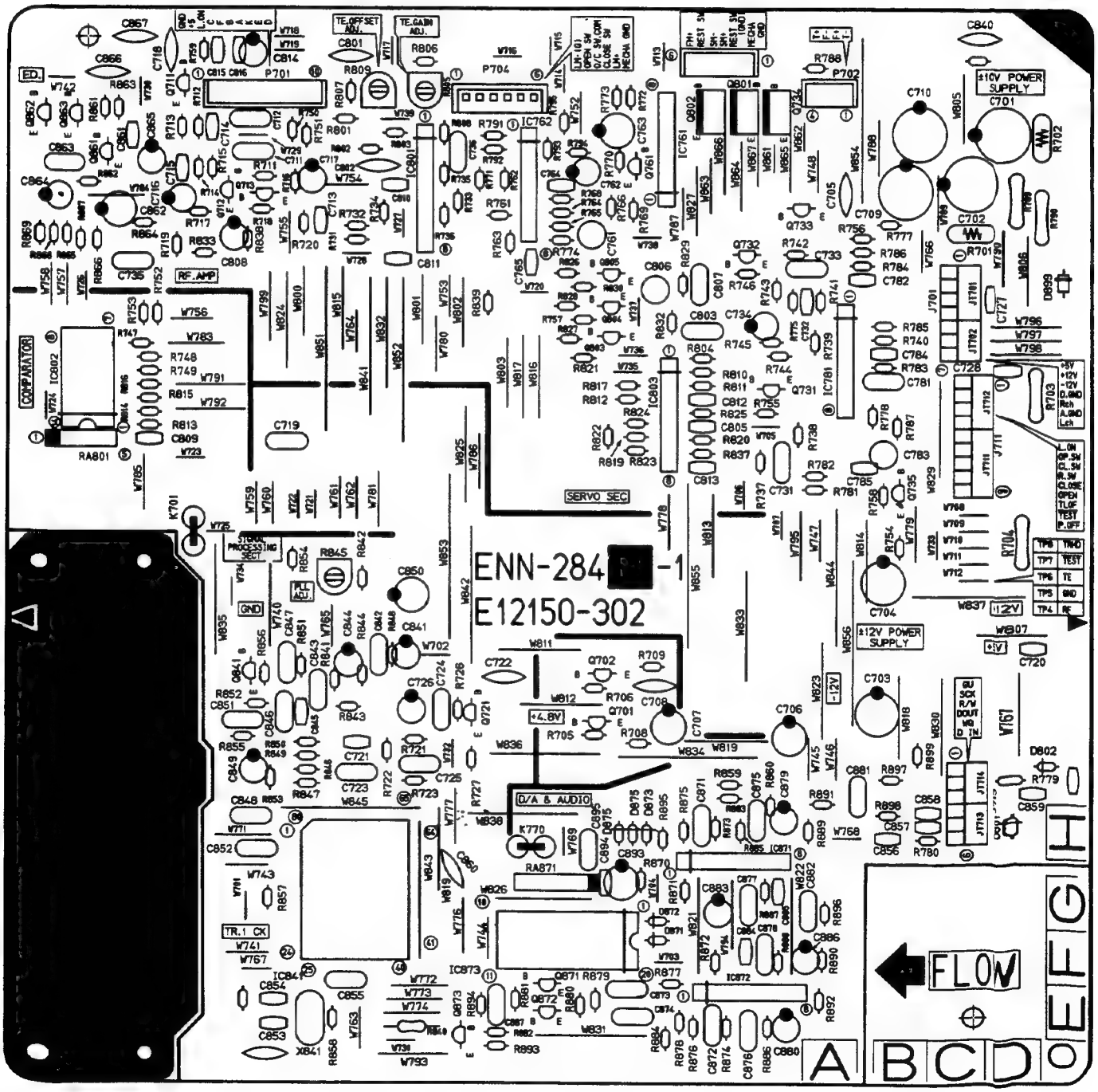
Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	FW971	EWR35B-20LST	FLAT WIRE (5PIN)	
	FW972	EWR23C-30JN	FLAT WIRE (3PIN)	
	FW973	EWR35B-20SST	FLAT WIRE (5PIN)	
	FW974	EWR33B-10LST	FLAT WIRE (3PIN)	
	JA511	EMV7123-027R	CONNECTOR (27PIN)	

⚠ : SAFETY PARTS

■ENN-284☐ CD Servo Control PC Board Ass'y

Note : ENN-284 ☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	·Designated Areas
ENN-284 [A]	the U.S.A., Canada
ENN-284 [B]	Australia, the U.K. Continental Europe East Europe Poland, Soviet Union and Rumania Universal Type
ENN-284 [C]	Germany, Italy

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q701	2SA934(Q,R)	SILICON	ROHM	
	Q702	DTC144WS	SILICON	ROHM	
	Q711	2SC535(B,C)	SILICON	HITACHI	
	Q712	2SC1740S(R,S)	SILICON	ROHM	
	Q713	2SA933S(R,S)	SILICON	ROHM	
	Q721	2SD2144S(VW)	SILICON	ROHM	
	Q731	2SD2144S(VW)	SILICON	ROHM	
	Q732	2SA933S(R,S)	SILICON	ROHM	
	Q733	2SC2060(Q,R)	SILICON	ROHM	
	Q734	2SB1357(E,F)	SILICON	ROHM	
	Q735	DTA144WS	SILICON	ROHM	
	Q761	2SD2144S(VW)	SILICON	ROHM	
	Q801	2SD2037(E,F)	SILICON	ROHM	
	Q802	2SB1357(E,F)	SILICON	ROHM	
	Q803	2SD2144S(VW)	SILICON	ROHM	
	Q804	2SD2144S(VW)	SILICON	ROHM	
	Q805	2SD2144S(VW)	SILICON	ROHM	
	Q841	2SD2144S(VW)	SILICON	ROHM	
	Q861	2SA933S(R,S)	SILICON	ROHM	
	Q862	2SC1740S(R,S)	SILICON	ROHM	
	Q863	2SC1740S(R,S)	SILICON	ROHM	
	Q871	2SD2144S(VW)	SILICON	ROHM	
	Q872	2SD2144S(VW)	SILICON	ROHM	
	Q873	DTA114YS	SILICON	ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC761	STA341M(A)	I.C.	SANKEN	
	IC762	VC4580L	I.C.	DAINICHI	
	IC781	VC4580L	I.C.	DAINICHI	
	IC801	NJM072S	I.C.	DAINICHI	
	IC802	BA10339	I.C.	ROHM	
	IC803	VC4580L	I.C.	DAINICHI	
	IC841	YM7121B	I.C.	YAMAHA	
	IC871	BA15218N	I.C.	ROHM	
	IC872	BA15218N	I.C.	ROHM	
	IC873	LC7881-C	I.C.	SANYO	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	D871	1SS133	SILICON	ROHM	
	D872	1SS133	SILICON	ROHM	
	D873	MTZ5.1JB	ZENER	ROHM	
	D899	1SR139-200	SILICON	ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C701	QETB1CM-477	470MF	16V	ELECTRO	
	C702	QETB1CM-477	470MF	16V	ELECTRO	
	C703	QETB1CM-227	220MF	16V	ELECTRO	
	C704	QETB1CM-227	220MF	16V	ELECTRO	
	C705	QCF21HP-223	0.022MF	50V	CERAMIC	
	C706	QETB1CM-476	47MF	16V	ELECTRO	
	C707	QETBOJM-227	220MF	6.3V	ELECTRO	
	C708	QCF21HP-223	0.022MF	50V	CERAMIC	
	C709	QETB1CM-477	470MF	16V	ELECTRO	
	C710	QETB1CM-477	470MF	16V	ELECTRO	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C711	QFLB1HJ-472	4700PF	50V	MYLAR	
	C712	QFLB1HJ-472	4700PF	50V	MYLAR	
	C713	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C714	QCSB1HK-3R9	3.9PF	50V	CERAMIC	
	C715	QCBB1HK-471	470PF	50V	CERAMIC	
	C716	QETB1EM-106	10MF	25V	ELECTRO	
	C717	QETB1CM-476	47MF	16V	ELECTRO	
	C718	QCS21HJ-680	68PF	50V	CERAMIC	
	C719	QFLB1HJ-183	0.018MF	50V	MYLAR	
	C720	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C721	QCSB1HJ-470	47PF	50V	CERAMIC	
	C722	QCF21HP-223	0.022MF	50V	CERAMIC	
	C723	QCZ0202-155	1.5MF	25V	CERAMIC	
	C724	QFLB1HJ-563	0.056MF	50V	MYLAR	
	C725	QFV81HJ-564	0.56MF	50V	T.FILM	
	C726	QETB1EM-106	10MF	25V	ELECTRO	
	C731	QFLB1HJ-183	0.018MF	50V	MYLAR	
	C732	QCBB1HK-271	270PF	50V	CERAMIC	
	C733	QFLB1HJ-393	0.039MF	50V	MYLAR	
	C734	QEK51CM-226	22MF	16V	ELECTRO	
	C735	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C736	QFV81HJ-224	0.22MF	50V	T.FILM	
	C761	QEN51HM-225	2.2MF	50V	NON POLE	
	C762	QETB1EM-226	22MF	25V	ELECTRO	
	C763	QETBOJM-227	220MF	6.3V	ELECTRO	
	C764	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C765	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C781	QFLB1HJ-272	2700PF	50V	MYLAR	
	C782	QCBB1HK-101	100PF	50V	CERAMIC	
	C783	QEN51HM-225	2.2MF	50V	NON POLE	
	C784	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C785	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C801	QCT26CH-151	150PF	50V	CERAMIC	
	C802	QCT26CH-121	120PF	50V	CERAMIC	
	C803	QFLB1HJ-223	0.022MF	50V	MYLAR	
	C805	QCSB1HK-4R7	4.7PF	50V	CERAMIC	
	C806	QEN51HM-225	2.2MF	50V	NON POLE	
	C807	QFLB1HJ-563	0.056MF	50V	MYLAR	
	C808	QETB1CM-476	47MF	16V	ELECTRO	
	C809	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C810	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C811	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C812	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C813	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C815	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C816	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C841	QETB1AM-107	100MF	10V	ELECTRO	
	C842	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C843	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C844	QETB1EM-106	10MF	25V	ELECTRO	
	C845	QCBB1HK-101	100PF	50V	CERAMIC	
	C846	QFV81HJ-224	0.22MF	50V	T.FILM	
	C847	QFLB1HJ-182	1800PF	50V	MYLAR	
	C848	QFV81HJ-224	0.22MF	50V	T.FILM	
	C849	QETB1EM-106	10MF	25V	ELECTRO	
	C850	QETBOJM-227	220MF	6.3V	ELECTRO	
	C851	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C852	QFLB1HJ-104	0.1MF	50V	MYLAR	
	C853	QCSB1HJ-100	10PF	50V	CERAMIC	
	C854	QCSB1HJ-100	10PF	50V	CERAMIC	
	C855	QFV81HJ-224	0.22MF	50V	T.FILM	
	C856	QCSB1HJ-470	47PF	50V	CERAMIC	
	C857	QCBB1HK-101	100PF	50V	CERAMIC	
	C858	QCBB1HK-101	100PF	50V	CERAMIC	
	C859	QCSB1HJ-470	47PF	50V	CERAMIC	
	C860	QCF21HP-223	0.022MF	50V	CERAMIC	
	C861	QCBB1HK-101	100PF	50V	CERAMIC	
	C862	QETB1CM-107	100MF	16V	ELECTRO	
	C863	QFLB1HJ-473	0.047MF	50V	MYLAR	
	C864	QETB1EM-106	10MF	25V	ELECTRO	
	C865	QETB1HM-105	1MF	50V	ELECTRO	
	C871	QFLB1HJ-392	3900PF	50V	MYLAR	
	C872	QFLB1HJ-392	3900PF	50V	MYLAR	
	C873	QFLB1HJ-683	0.068MF	50V	MYLAR	
	C874	QFLB1HJ-683	0.068MF	50V	MYLAR	
	C875	QFLB1HJ-103	0.01MF	50V	MYLAR	
	C876	QFLB1HJ-103	0.01MF	50V	MYLAR	
	C877	QFLB1HJ-222	2200PF	50V	MYLAR	
	C878	QFLB1HJ-222	2200PF	50V	MYLAR	
	C879	QEK51EM-476	47MF	25V	ELECTRO	
	C880	QEK51EM-476	47MF	25V	ELECTRO	
	C881	QFLB1HJ-562	5600PF	50V	MYLAR	
	C882	QFLB1HJ-562	5600PF	50V	MYLAR	
	C883	QETB1EM-106	10MF	25V	ELECTRO	
	C884	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C885	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C886	QETB1EM-106	10MF	25V	ELECTRO	
	C887	QCF21HP-102	1000PF	50V	CERAMIC	
	C893	QETBOJM-227	220MF	6.3V	ELECTRO	
	C894	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C895	QFV81HJ-124	0.12MF	50V	T.FILM	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
⚠	R701	PTH61G30BD2R2N			FUSIBLE	
⚠	R702	PTH61G30BD2R2N			FUSIBLE	
⚠	R703	QRZ0077-100	10	1/4W	FUSIBLE	
⚠	R704	QRZ0077-100	10	1/4W	FUSIBLE	
	R705	QRD167J-472	4.7K	1/6W	CARBON	
	R706	QRD167J-472	4.7K	1/6W	CARBON	
	R708	QRD167J-222	2.2K	1/6W	CARBON	
	R709	QRD167J-181	180	1/6W	CARBON	
	R711	QRD167J-183	18K	1/6W	CARBON	
	R712	QRD167J-432	4.3K	1/6W	CARBON	
	R713	QRD167J-391	390	1/6W	CARBON	
	R714	QRD167J-221	220	1/6W	CARBON	
	R715	QRD167J-152	1.5K	1/6W	CARBON	
	R716	QRD167J-561	560	1/6W	CARBON	
	R717	QRD167J-561	560	1/6W	CARBON	
	R718	QRD167J-562	5.6K	1/6W	CARBON	
	R719	QRD167J-152	1.5K	1/6W	CARBON	
	R720	QRD167J-271	270	1/6W	CARBON	
	R721	QRD167J-471	470	1/6W	CARBON	
	R722	QRD167J-682	6.8K	1/6W	CARBON	
	R723	QRD167J-472	4.7K	1/6W	CARBON	
	R726	QRD167J-102	1K	1/6W	CARBON	
	R727	QRD167J-183	18K	1/6W	CARBON	
	R731	QRD167J-104	100K	1/6W	CARBON	
	R732	QRD167J-104	100K	1/6W	CARBON	
	R733	QRD167J-394	390K	1/6W	CARBON	
	R734	QRD167J-394	390K	1/6W	CARBON	
	R735	QRD167J-121	120	1/6W	CARBON	
	R736	QRD167J-182	1.8K	1/6W	CARBON	
	R737	QRD167J-681	680	1/6W	CARBON	
	R738	QRD167J-473	47K	1/6W	CARBON	
	R739	QRD167J-331	330	1/6W	CARBON	
	R740	QRD167J-333	33K	1/6W	CARBON	
	R741	QRD167J-273	27K	1/6W	CARBON	
	R742	QRD167J-394	390K	1/6W	CARBON	
	R743	QRD167J-105	1M	1/6W	CARBON	
	R744	QRD167J-470	47	1/6W	CARBON	
	R745	QRD167J-473	47K	1/6W	CARBON	
	R746	QRD167J-272	2.7K	1/6W	CARBON	
	R747	QRD167J-682	6.8K	1/6W	CARBON	
	R748	QRD167J-104	100K	1/6W	CARBON	
	R749	QRD167J-562	5.6K	1/6W	CARBON	
	R750	QRD167J-105	1M	1/6W	CARBON	
	R751	QRD167J-105	1M	1/6W	CARBON	
	R752	QRD167J-104	100K	1/6W	CARBON	
	R753	QRD167J-562	5.6K	1/6W	CARBON	
	R754	QRD167J-104	100K	1/6W	CARBON	
	R755	QRD167J-103	10K	1/6W	CARBON	
	R756	QRD167J-470	47	1/6W	CARBON	
	R757	QRD167J-183	18K	1/6W	CARBON	
	R758	QRD167J-183	18K	1/6W	CARBON	
	R759	QRD167J-222	2.2K	1/6W	CARBON	
	R761	QRD167J-564	560K	1/6W	CARBON	
	R762	QRD167J-224	220K	1/6W	CARBON	
	R763	QRD167J-393	39K	1/6W	CARBON	
	R764	QRD167J-224	220K	1/6W	CARBON	
	R765	QRD167J-562	5.6K	1/6W	CARBON	
	R766	QRD167J-392	3.9K	1/6W	CARBON	
	R768	QRD167J-103	10K	1/6W	CARBON	
	R769	QRD167J-102	1K	1/6W	CARBON	
	R770	QRD167J-471	470	1/6W	CARBON	
	R771	QRD167J-683	68K	1/6W	CARBON	
	R772	QRD167J-183	18K	1/6W	CARBON	
	R773	QRD167J-183	18K	1/6W	CARBON	
	R774	QRD167J-470	47	1/6W	CARBON	
	R775	QRD167J-335	3.3M	1/6W	CARBON	
	R779	QRD167J-152	1.5K	1/6W	CARBON	
	R780	QRD167J-152	1.5K	1/6W	CARBON	
	R781	QRD167J-684	680K	1/6W	CARBON	
	R782	QRD167J-684	680K	1/6W	CARBON	
	R783	QRD167J-823	82K	1/6W	CARBON	
	R784	QRD167J-470	47	1/6W	CARBON	
	R785	QRD167J-683	68K	1/6W	CARBON	
	R786	QRD167J-123	12K	1/6W	CARBON	
	R787	QRD167J-152	1.5K	1/6W	CARBON	
	R788	QRD167J-2R2	2.2	1/6W	CARBON	
	R789	QRD12CJ-4R7S	4.7	1/2W	R.NETWORK	
	R790	QRD12CJ-4R7S	4.7	1/2W	R.NETWORK	
	R791	QRD167J-513	51K	1/6W	CARBON	
	R792	QRD167J-103	10K	1/6W	CARBON	
	R793	QRD167J-683	68K	1/6W	CARBON	
	R794	QRD167J-103	10K	1/6W	CARBON	
	R795	QRD167J-221	220	1/6W	CARBON	
	R801	QRD167J-563	56K	1/6W	CARBON	
	R802	QRD167J-563	56K	1/6W	CARBON	
	R803	QRD167J-394	390K	1/6W	CARBON	
	R804	QRD167J-681	680	1/6W	CARBON	
	R805	QVPA601-202A	2K		VARIABLE	
	R806	QRD167J-561	560	1/6W	CARBON	
	R807	QRD167J-334	330K	1/6W	CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	R808	QRD167J-222	2.2K	1/6W	CARBON	
	R809	QVPA601-154A	150K		VARIABLE	
	R810	QRD167J-223	22K	1/6W	CARBON	
	R811	QRD167J-682	6.8K	1/6W	CARBON	
	R812	QRD167J-103	10K	1/6W	CARBON	
	R813	QRD167J-562	5.6K	1/6W	CARBON	
	R814	QRD167J-562	5.6K	1/6W	CARBON	
	R815	QRD167J-562	5.6K	1/6W	CARBON	
	R816	QRD167J-562	5.6K	1/6W	CARBON	
	R817	QRD167J-183	18K	1/6W	CARBON	
	R819	QRD167J-103	10K	1/6W	CARBON	
	R820	QRD167J-224	220K	1/6W	CARBON	
	R821	QRD167J-183	18K	1/6W	CARBON	
	R822	QRD167J-183	18K	1/6W	CARBON	
	R823	QRD167J-434	430K	1/6W	CARBON	
	R824	QRD167J-434	430K	1/6W	CARBON	
	R825	QRD167J-103	10K	1/6W	CARBON	
	R826	QRD167J-184	180K	1/6W	CARBON	
	R827	QRD167J-184	180K	1/6W	CARBON	
	R828	QRD167J-184	180K	1/6W	CARBON	
	R829	QRD167J-681	680	1/6W	CARBON	
	R830	QRD167J-183	18K	1/6W	CARBON	
	R832	QRD167J-102	1K	1/6W	CARBON	
	R833	QRD167J-562	5.6K	1/6W	CARBON	
	R837	QRD167J-470	47	1/6W	CARBON	
	R838	QRD167J-562	5.6K	1/6W	CARBON	
	R839	QRD167J-183	18K	1/6W	CARBON	
	R840	QRD167J-561	560	1/6W	CARBON	
	R841	QRD167J-182	1.8K	1/6W	CARBON	
	R842	QRD167J-221	220	1/6W	CARBON	
	R843	QRD167J-184	180K	1/6W	CARBON	
	R844	QRD167J-393	39K	1/6W	CARBON	
	R845	QVPA601-104A	100K		VARIABLE	
	R846	QRD167J-224	220K	1/6W	CARBON	
	R847	QRD167J-182	1.8K	1/6W	CARBON	
	R848	QRD167J-272	2.7K	1/6W	CARBON	
	R849	QRD167J-822	8.2K	1/6W	CARBON	
	R850	QRD167J-822	8.2K	1/6W	CARBON	
	R851	QRD167J-821	820	1/6W	CARBON	
	R852	QRD167J-182	1.8K	1/6W	CARBON	
	R853	QRD167J-101	100	1/6W	CARBON	
	R854	QRD167J-155	1.5M	1/6W	CARBON	
	R855	QRD167J-682	6.8K	1/6W	CARBON	
	R856	QRD167J-682	6.8K	1/6W	CARBON	
	R857	QRD167J-102	1K	1/6W	CARBON	
	R858	QRD167J-105	1M	1/6W	CARBON	
	R859	QRD167J-271	270	1/6W	CARBON	
	R860	QRD167J-271	270	1/6W	CARBON	
	R861	QRD167J-103	10K	1/6W	CARBON	
	R862	QRD167J-272	2.7K	1/6W	CARBON	
	R863	QRD167J-102	1K	1/6W	CARBON	
	R864	QRD167J-271	270	1/6W	CARBON	
	R865	QRD167J-103	10K	1/6W	CARBON	
	R866	QRD167J-562	5.6K	1/6W	CARBON	
	R867	QRD167J-472	4.7K	1/6W	CARBON	
	R868	QRD167J-822	8.2K	1/6W	CARBON	
	R869	QRD167J-103	10K	1/6W	CARBON	
	R870	QRD167J-101	100	1/6W	CARBON	
	R871	QRD167J-222	2.2K	1/6W	CARBON	
	R872	QRD167J-222	2.2K	1/6W	CARBON	
	R873	QRD167J-751	750	1/6W	CARBON	
	R874	QRD167J-751	750	1/6W	CARBON	
	R875	QRD167J-471	470	1/6W	CARBON	
	R876	QRD167J-471	470	1/6W	CARBON	
	R877	QRD167J-221	220	1/6W	CARBON	
	R878	QRD167J-221	220	1/6W	CARBON	
	R879	QRD167J-105	1M	1/6W	CARBON	
	R880	QRD167J-105	1M	1/6W	CARBON	
	R881	QRD167J-392	3.9K	1/6W	CARBON	
	R882	QRD167J-392	3.9K	1/6W	CARBON	
	R883	QRD167J-821	820	1/6W	CARBON	
	R884	QRD167J-821	820	1/6W	CARBON	
	R885	QRD167J-821	820	1/6W	CARBON	
	R886	QRD167J-821	820	1/6W	CARBON	
	R887	QRD167J-272	2.7K	1/6W	CARBON	
	R888	QRD167J-272	2.7K	1/6W	CARBON	
	R889	QRD167J-273	27K	1/6W	CARBON	
	R890	QRD167J-273	27K	1/6W	CARBON	
	R891	QRD167J-561	560	1/6W	CARBON	
	R892	QRD167J-561	560	1/6W	CARBON	
	R893	QRD167J-104	100K	1/6W	CARBON	
	R894	QRD167J-105	1M	1/6W	CARBON	
	R895	QRD167J-681	680	1/6W	CARBON	
	R896	QRD167J-302	3K	1/6W	CARBON	
	R897	QRD167J-302	3K	1/6W	CARBON	
	R898	QRD167J-392	3.9K	1/6W	CARBON	
	R899	QRD167J-392	3.9K	1/6W	CARBON	
	RA801	QRB045J-472	4.7K	1/8W	R.NETWORK	
	RA871	QRB055J-224	220K	1/8W	R.NETWORK	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E12150-302	CIRCUIT BOARD	
	J701	VMC0107-007	CONNECT TERMINAL (7PIN)	
	J713	VMC0107-006	CONNECT TERMINAL (6PIN)	
	K701	ENZ8101-008	INDUCTOR	
	K770	ENZ8101-008	INDUCTOR	
	P701	EMV5109-010A	PLUG ASSY (10PIN)	
	P702	EMV5109-004A	PLUG ASSY (4PIN)	
	P703	EMV5109-006A	PLUG ASSY (6PIN)	
	P704	EMV5133-006K	PLUG ASSY (6PIN)	
	JT711	EMV7122-005	CONNECTOR (5PIN)	
	JT712	EMV7122-004	CONNECTOR (4PIN)	
	XT841	ECX0169-344EA	RESONATOR	

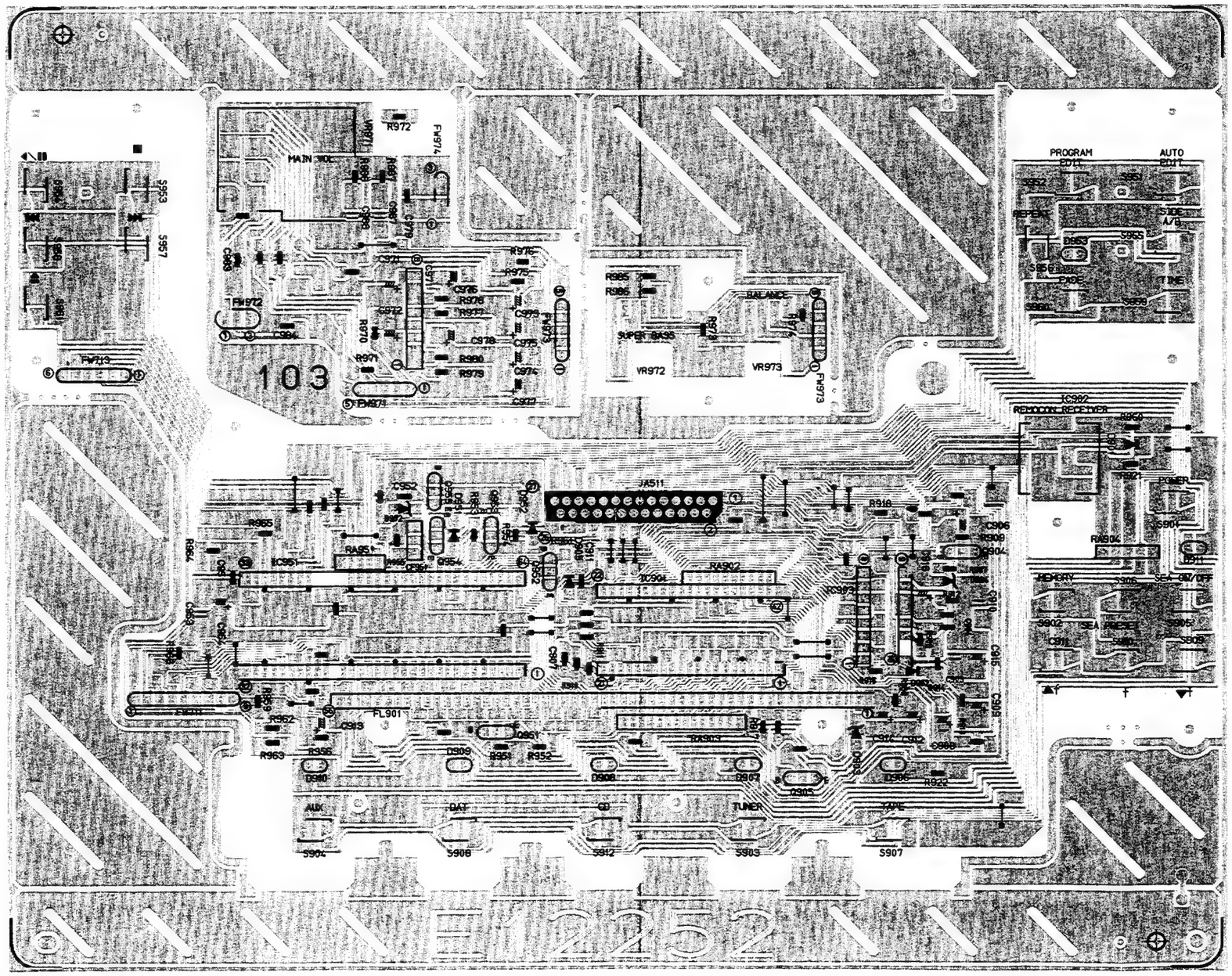
⚠ : SAFETY PARTS

— MEMO —

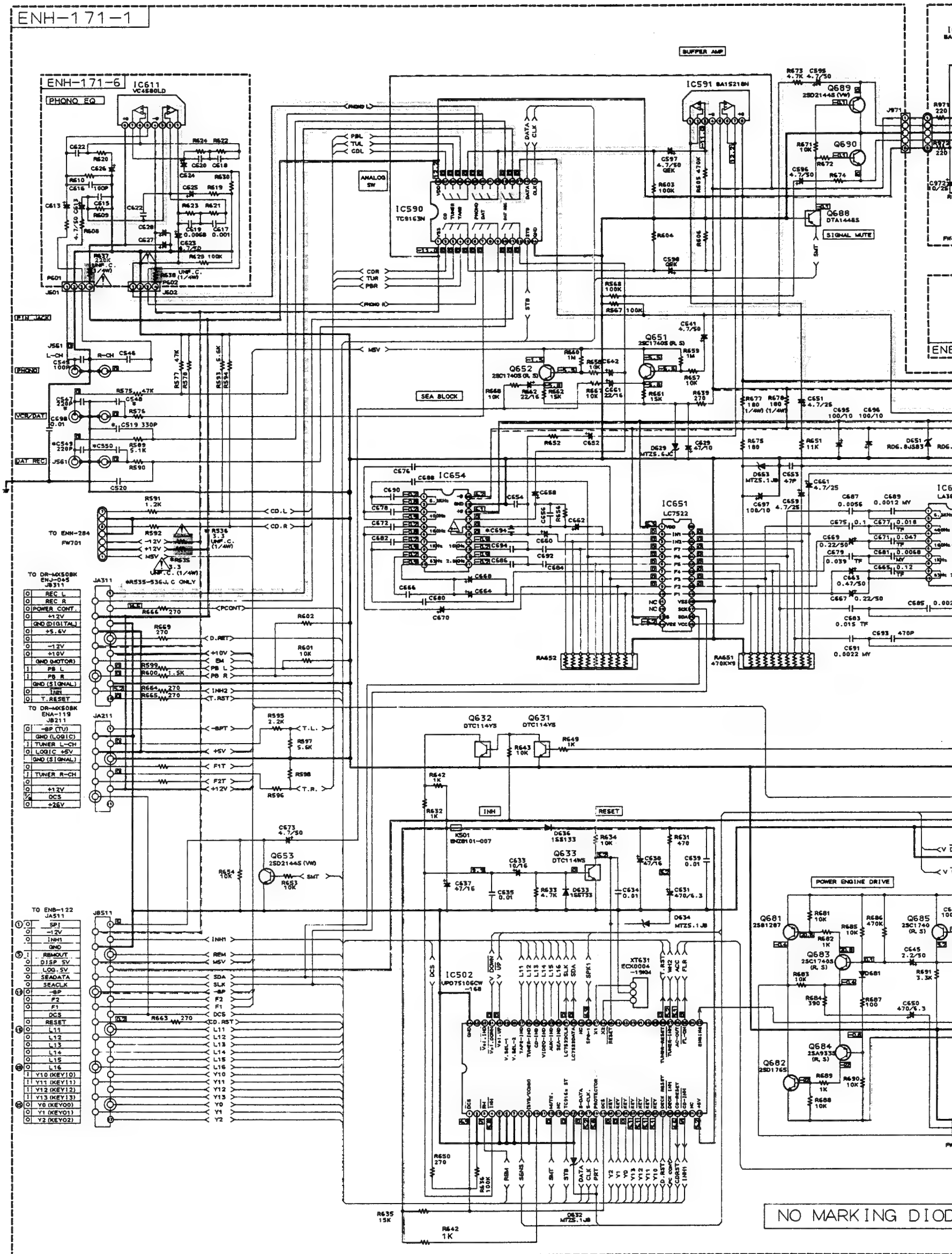
— MEMO —

— MEMO —

■ CD Control & FL Display PC Board (ENB-122)



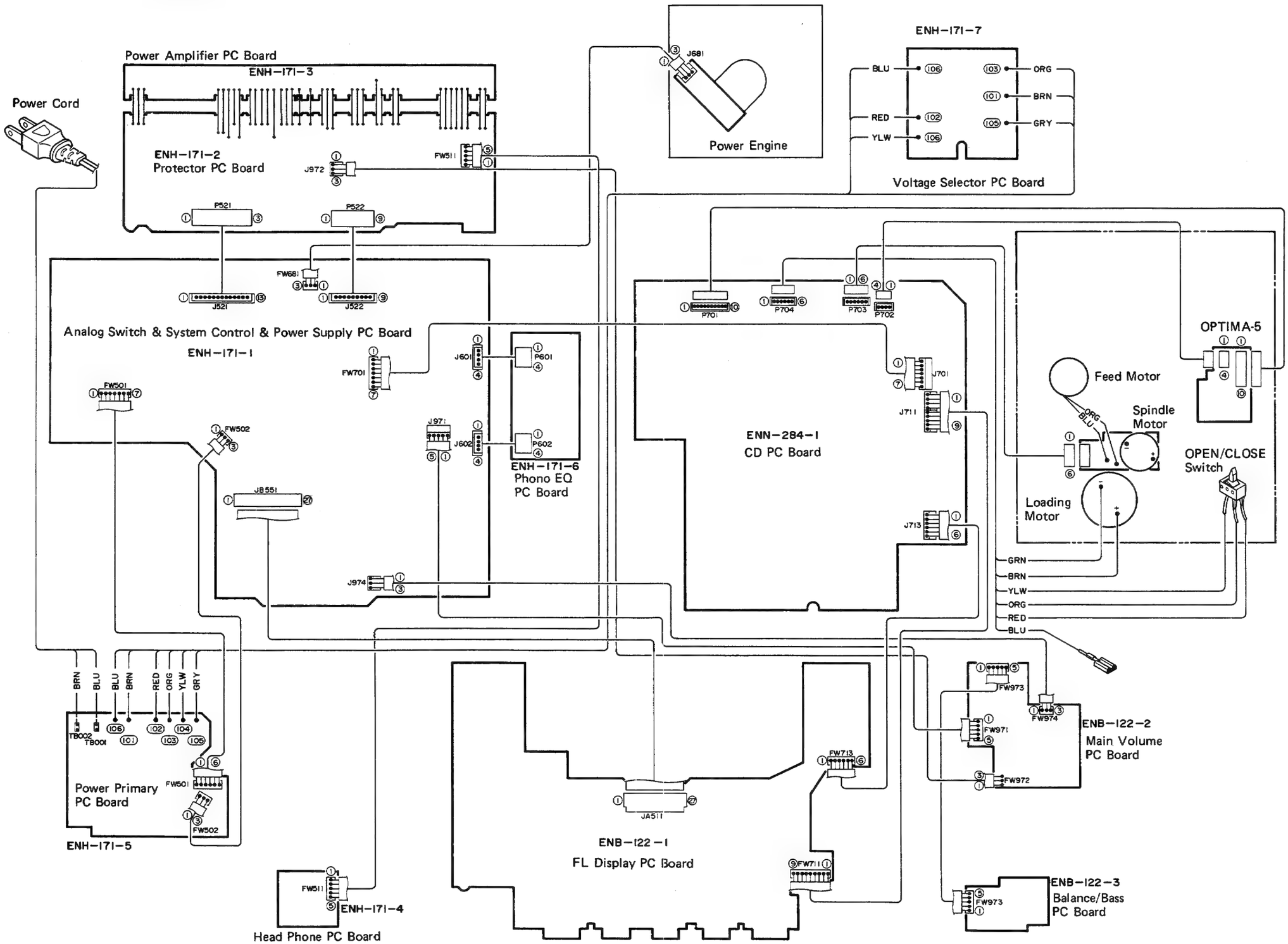
■ System Control & Power Amplifier Section



ENH-171 VER.	A	B, F	C, DBS	E
Symbol No. / VER	J, C	U, A	E, EF, V VX, BS	G, GI
F003 , F004	1.6A~ 125V (J, C)	T1.25A	T1.25A	T1.25A
D551~ D554	S3V20F	S3V20 (A) 30DL2FC ( )	S3V20F	S30DL2FC
C059	.1 S	0.01	0.01	0.01
R527~528	3.3 UNF.C	NONE	NONE	NONE
R500	180	220	220	220
R517 , R518	UNF.C	F.RES	F.RES	F.RES
R541 , R566	UNF.C	F.RES	F.RES	F.RES
C051 , C052	NONE	NONE	USED	USED
C503 , C504	USED	USED	USED	USED
C519 , C520	NONE	NONE	USED	USED
C537 , C538	NONE	NONE	USED	USED
C539	NONE	NONE	USED	USED
C547 , C550	NONE	NONE	USED	USED
C590	NONE	NONE	USED	USED
R535~536	3.3 UNF.C	NONE	NONE	NONE

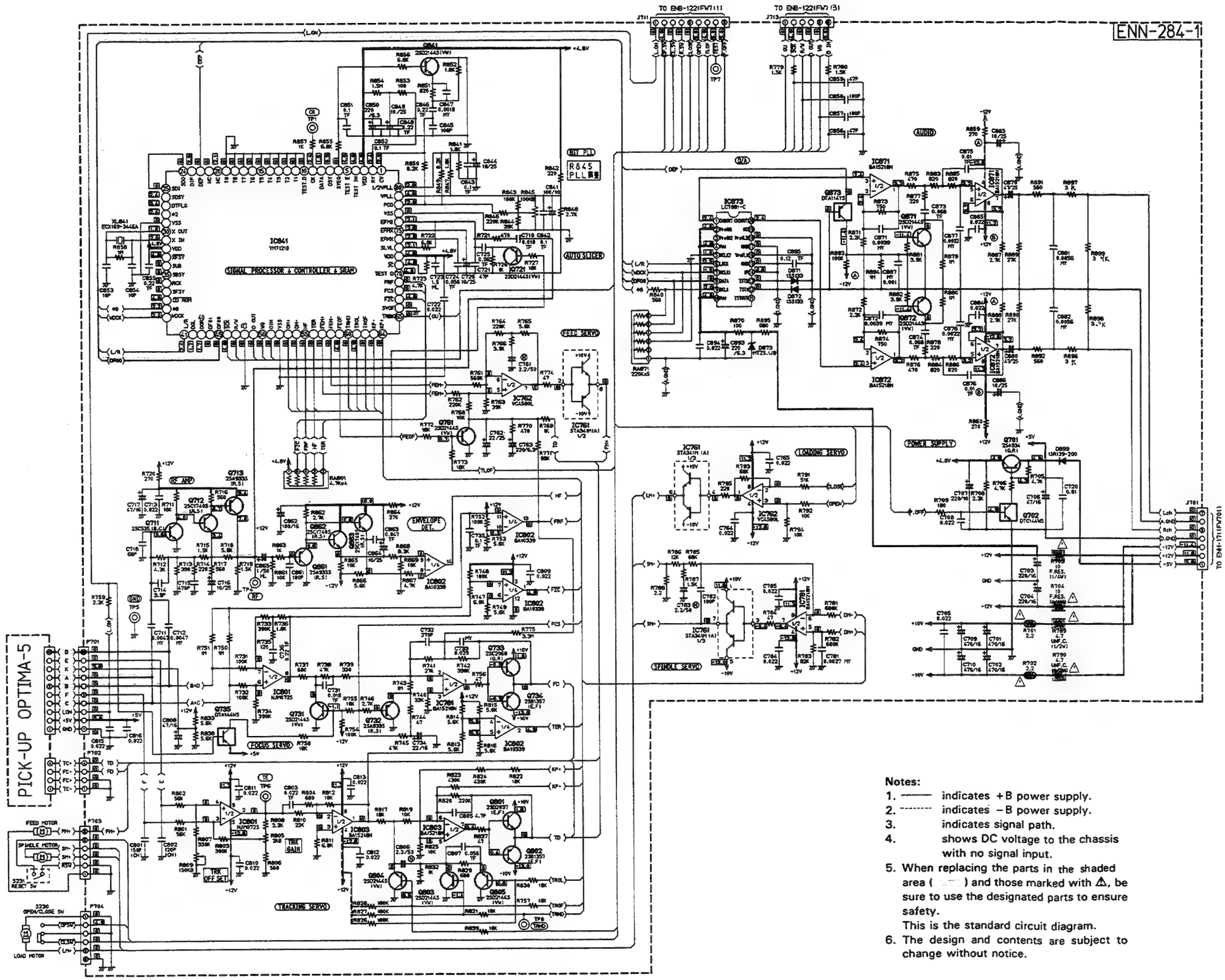
(No.20214)

Connection Diagram



Schematic Diagrams

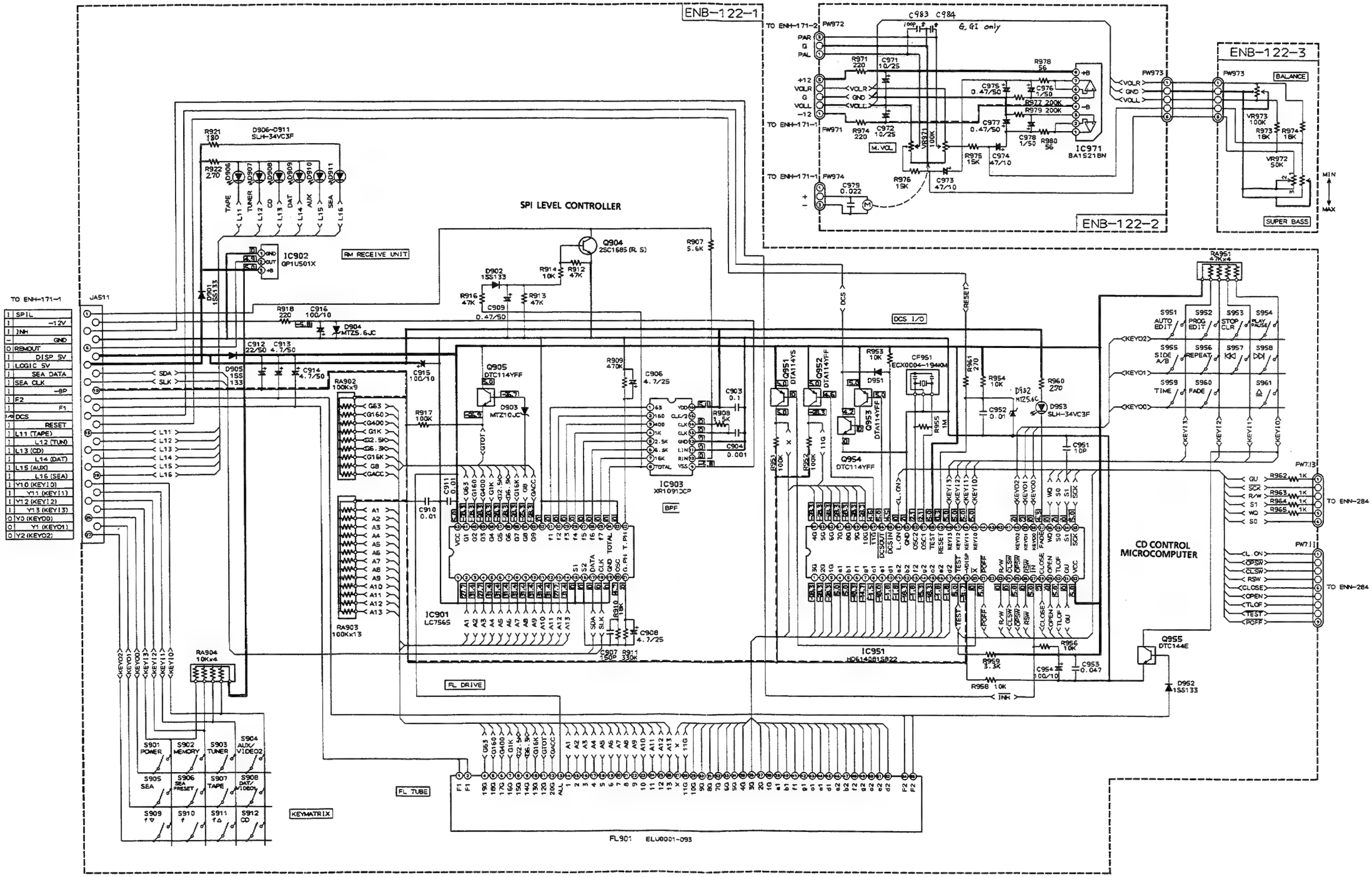
■ CD Section



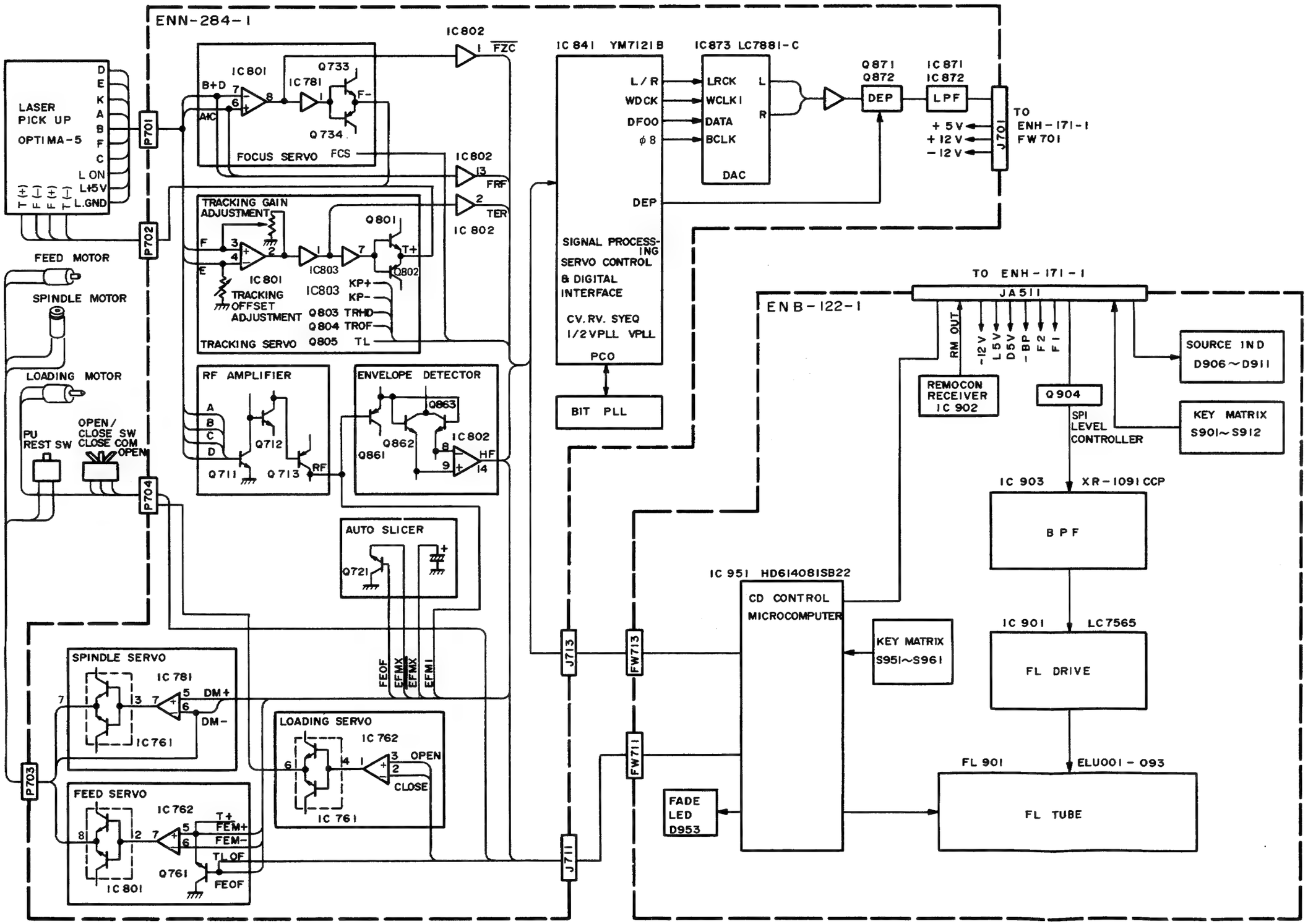
Notes:

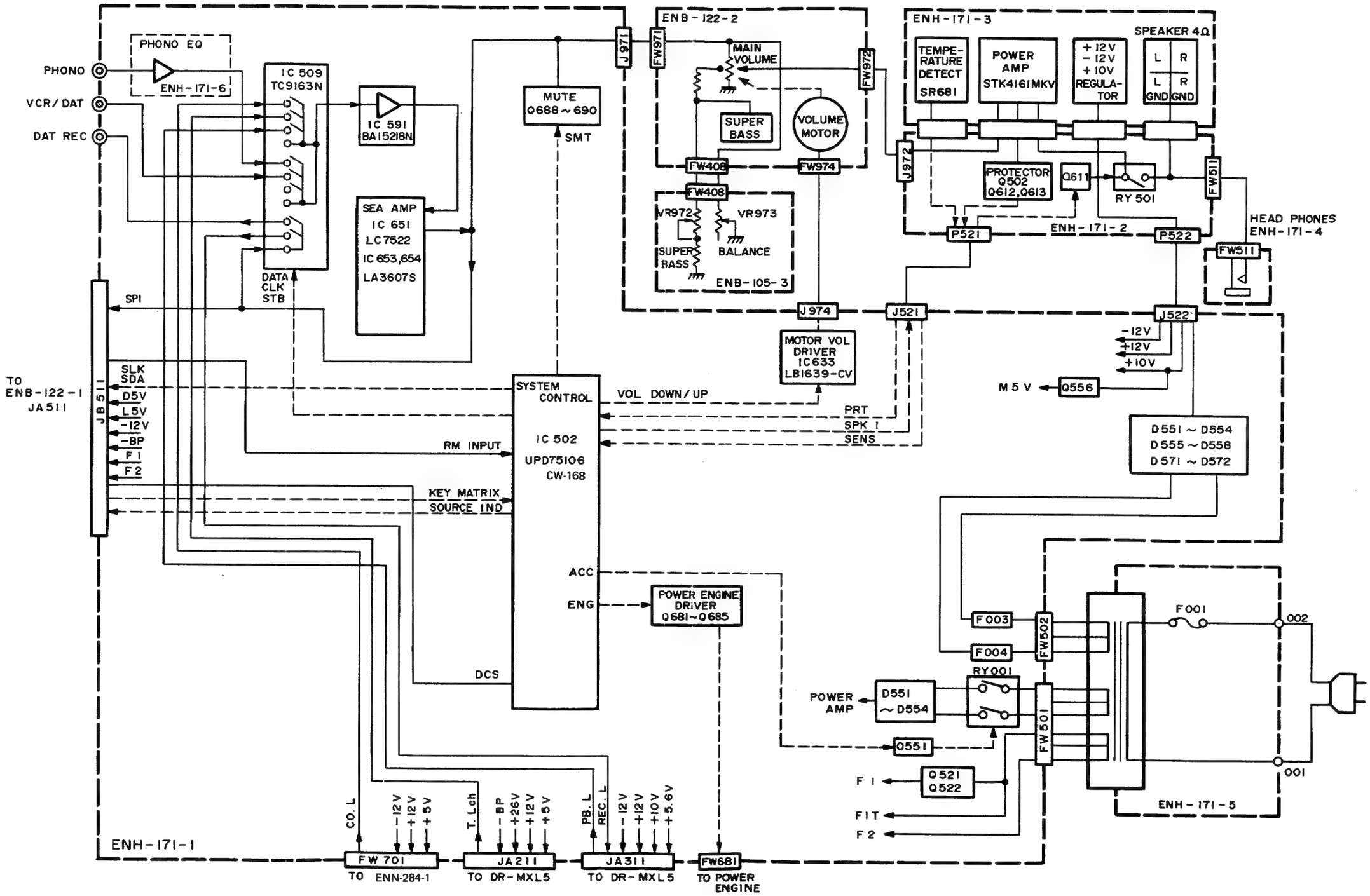
1. ——— indicates +B power supply.
2. - - - - - - - indicates −B power supply.
3. indicates signal path.
4. shows DC voltage to the chassis with no signal input.
5. When replacing the parts in the shaded area ( ) and those marked with ⚠, be sure to use the designated parts to ensure safety.
   This is the standard circuit diagram.
6. The design and contents are subject to change without notice.

■ System Control & FL Display Section



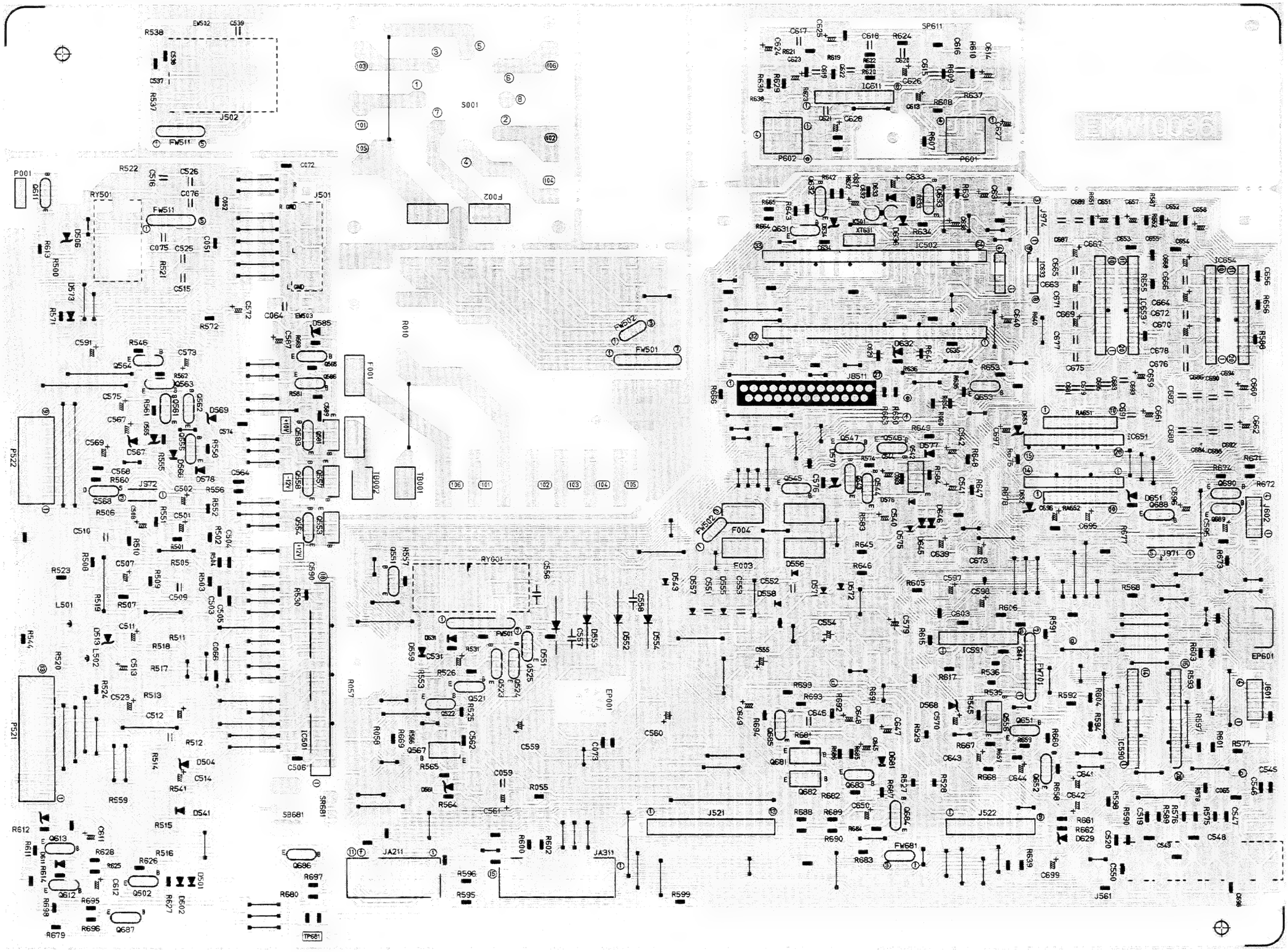
Block Diagram




PHONO EQ
ENH-171-6
PHONO
VCR/DAT
DAT REC
IC 509
TC9163N
IC 591
BA15218N
SEA AMP
IC 651
LC7522
IC 653,654
LA3607S
DATA
CLK
STB
MUTE
Q688~690
SMT
ENB-122-2
MAIN VOLUME
SUPER BASS
VOLUME MOTOR
FW971
FW972
FW408
FW974
VR972
VR973
SUPER BASS
BALANCE
ENB-105-3
J971
ENH-171-3
TEMPE-RATURE DETECT
SR681
POWER AMP
STK4161MKV
+12V
-12V
+10V
REGULA-TOR
SPEAKER 4Ω
L R
L R
GND GND
PROTECTOR
Q502
Q612,Q613
Q611
RY 501
FW511
J972
P521
ENH-171-2
P522
HEAD PHONES
ENH-171-4
J974
J521
J522
MOTOR VOL DRIVER
IC633
LB1639-CV
-12V
+12V
+10V
M5V
Q556
SPI
SLK
SDA
D5V
L5V
-12V
-BP
F1
F2
JB511
TO ENB-122-1 JA511
SYSTEM CONTROL
IC 502
UPD75106
CW-168
VOL DOWN/UP
PRT
SPK I
SENS
RM INPUT
KEY MATRIX
SOURCE IND
D551~D554
D555~D558
D571~D572
ACC
ENG
POWER ENGINE DRIVER
Q681~Q685
DCS
F003
F004
FW502
RY001
POWER AMP
D551 ~D554
Q551
FW501
F1
Q521
Q522
F1T
F2
F001
002
001
ENH-171-5
ENH-171-1
CO.L
-12V
+12V
+5V
T.Lch
-BP
+26V
+12V
+5V
PB.L
REC.L
-12V
+12V
+10V
+5.6V
FW701
TO ENN-284-1
JA211
TO DR-MXL5
JA311
TO DR-MXL5
FW681
TO POWER ENGINE

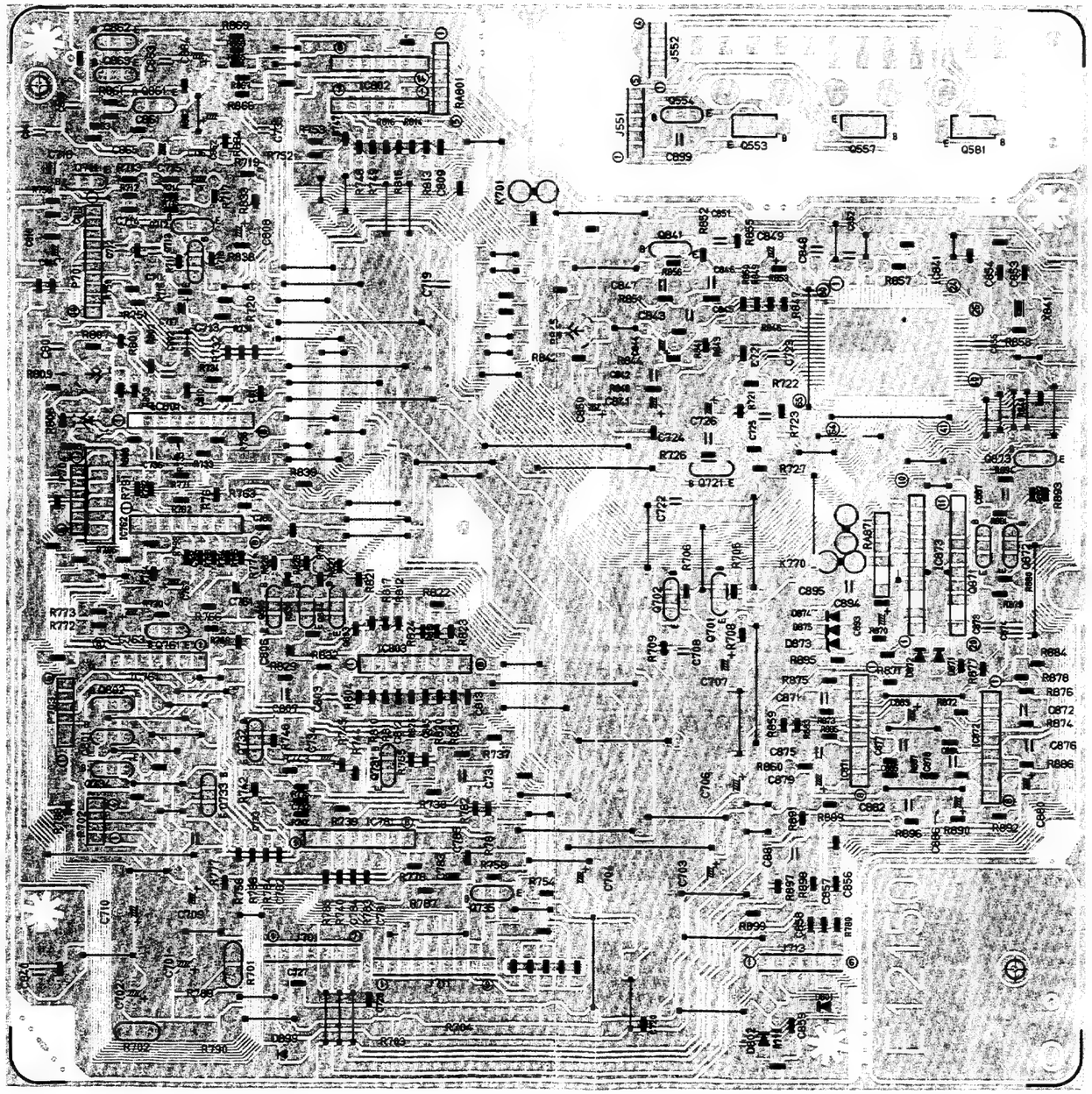
Printed Circuit Boards

■ System Control & Power Amplifier PC Board (ENH-171)



(No.20214)

■ CD Servo Control PC Board (ENN-284)



1055

JVC

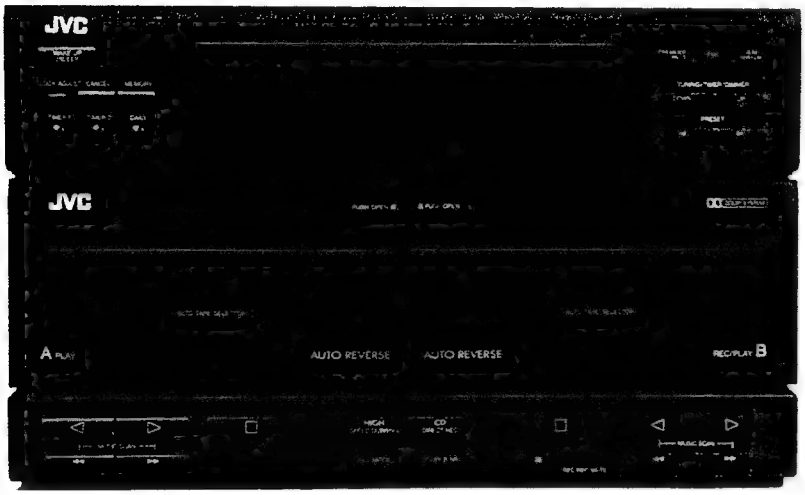
SERVICE MANUAL

COMPACT COMPONENT SYSTEM

MODEL No. **CA-MX50BK**

(Unit No. DR-MX50BK)

AXMX50BK



* For instruction manual, please refer to the CA-MX50BK (SM.NO.20239).

* AX-MX50BK is needed for power supply etc, when servicing.

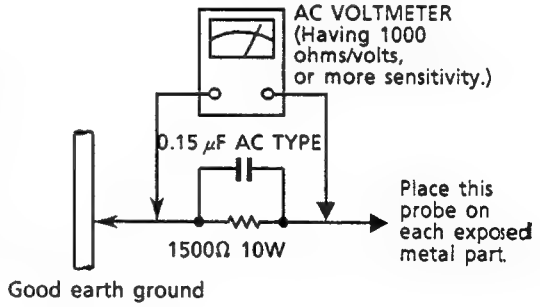
Contents

1055

No. 20240
Mar. 1991

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, contorl shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.).
     This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Specifications

CD / Amplifier Component

Dimensions	10-7 / 8 x 6-3 / 4 x 12-3 / 8 inches (275 x 170 x 314 mm)
Weight	13.9 lbs (6.3 kg)

Amplifier

Output Power	**35 watts per channel, min. RMS, both channels driven into 4 ohms from 40 Hz to 20 kHz, with no more than 0.9 % total harmonic distortion**
Total Harmonic Distortion at Half-Rated Power	0.07 %
Input Sensitivity / Impedance (1kHz) VCR / DAT	300mV / 75k ohms
PHONO	2.5mV / 50k ohms
SEA Center Frequencies	63, 160, 400, 1k, 2.5k, 6.3k, 16kHz
SEA Control range	± 10dB

Compact Disc Player

Dynamic Range (1kHz)	90dB
Signal-to-Noise Ratio	100dB
Frequency Response	5Hz - 20kHz
Wow and Flutter	Unmeasurable

* Design and specifications subject to change without notice

General

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC120V ∿, 60Hz	117W
Canada	AC120V ∿, 60Hz	130W, 170VA
U.K.	AC240V ∿, 50Hz	267W
Australia	AC240V ∿, 50Hz	267W
Continental Europe	AC230V ∿, 50Hz	138W
Other area	AC 110 / 127 / 220 / 240V ∿, selectable, 50 / 60Hz	138W

Tape Deck / Tuner Conponent

Dimensions	10-7 / 8 x 6-3 / 4 x 11 inches (275 x 170 x 279 mm)
Weight	7.5 lbs (3.4 kg)

Tape Deck

Frequency Response	Metal : 30Hz - 17,000Hz CrO2 : 30Hz - 16,000Hz Normal : 30Hz - 15,000Hz
Wow and Flutter (WRMS)	0.08 %

FM Tuner

Tuning range	87.5 MHz - 108.0 MHz
Usable Sensitivity	0.95μV / 75 ohms (10.8dBf)
Signal-to-Noise Ratio (IHF-A Weighted)	MONO (at 85dBf) 80dB STEREO (at 85dBf) 73dB

AM Tuner

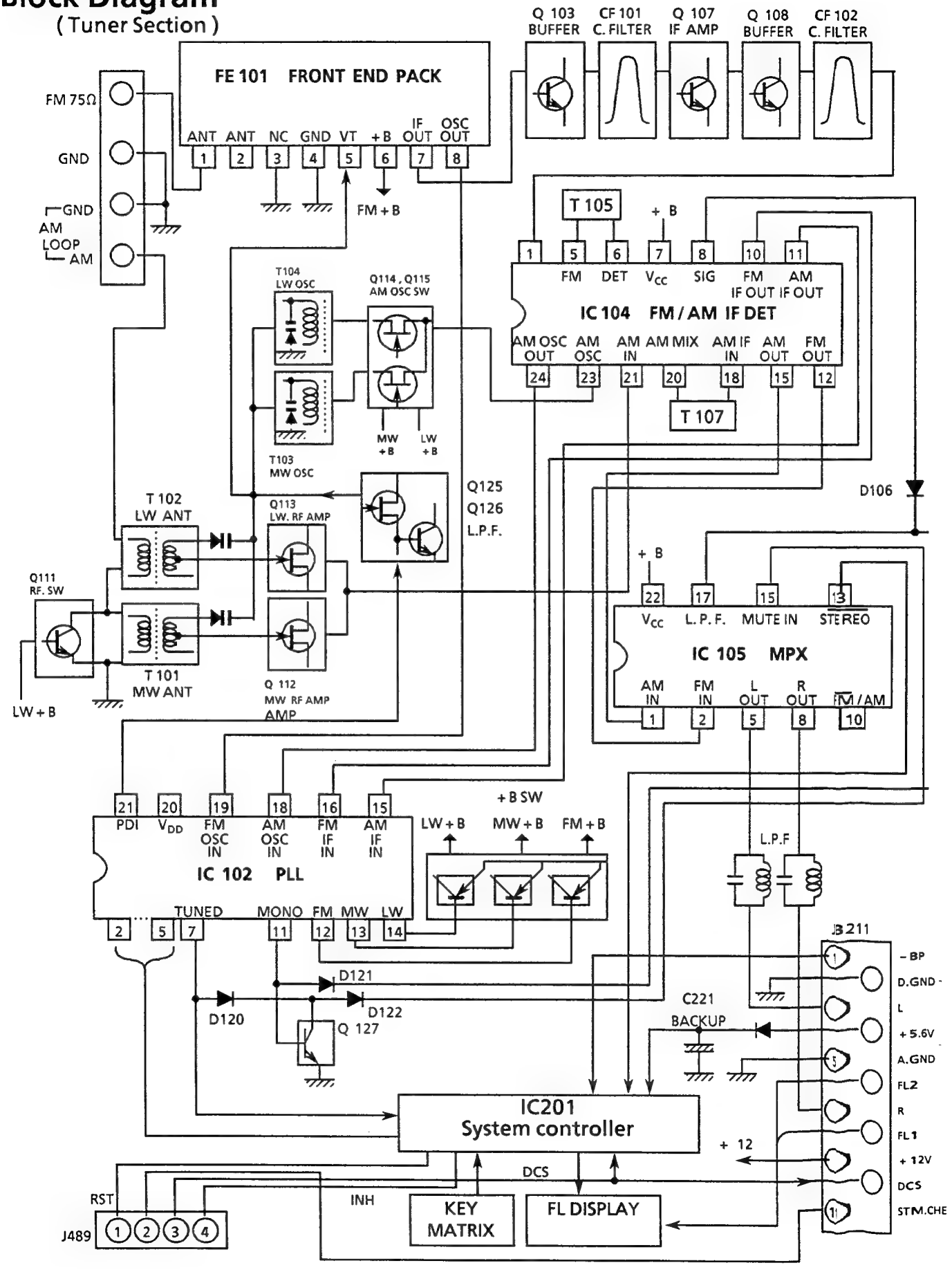
Tuning range	
MW	
U.S.A. and Canada	530 kHz ~ 1710 kHz
U.K., Continental Europe and Australia	522 kHz ~ 1629 kHz
Other area	531 kHz ~ 1602 kHz 530 kHz ~ 1600 kHz
LW	144 kHz ~ 353 kHz

Accessories

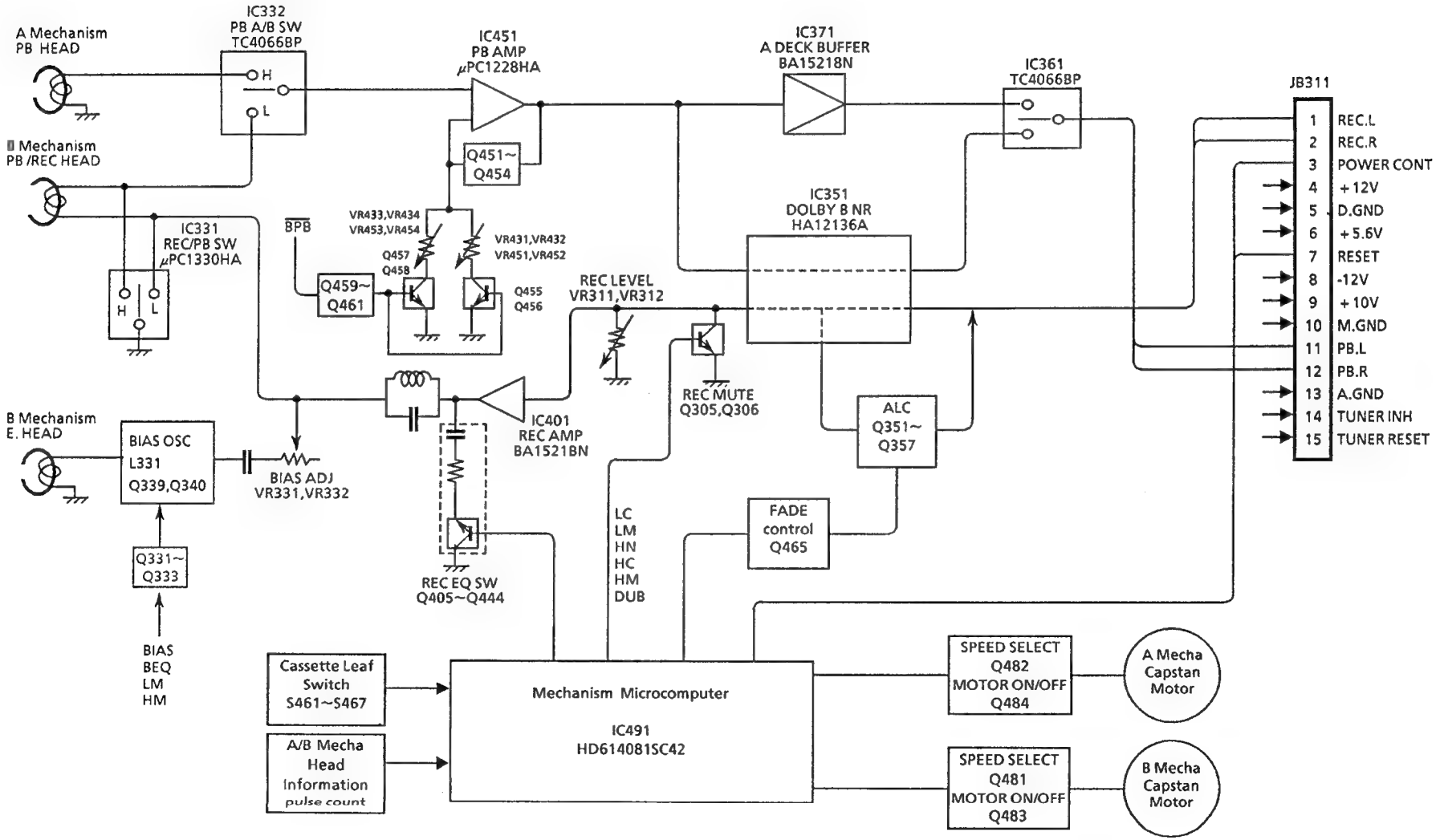
FM Feeder antenna	1
AM loop antenna	1
Speaker cable	2
Remote Controller (RM-SE MX70U)	1
Batteries (UM-4 / AAA / R03)	2

Block Diagram

(Tuner Section)



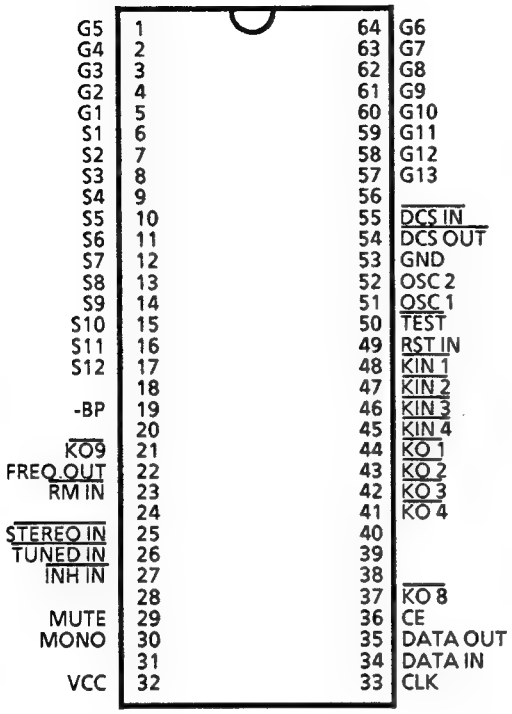
(Cassette Deck Section)



Description of Major LSIs

■ HD614089SC35 (IC201) : Tuner Control & FL Driver

(1) Terminal Layout



(2) Table of Key Matrix

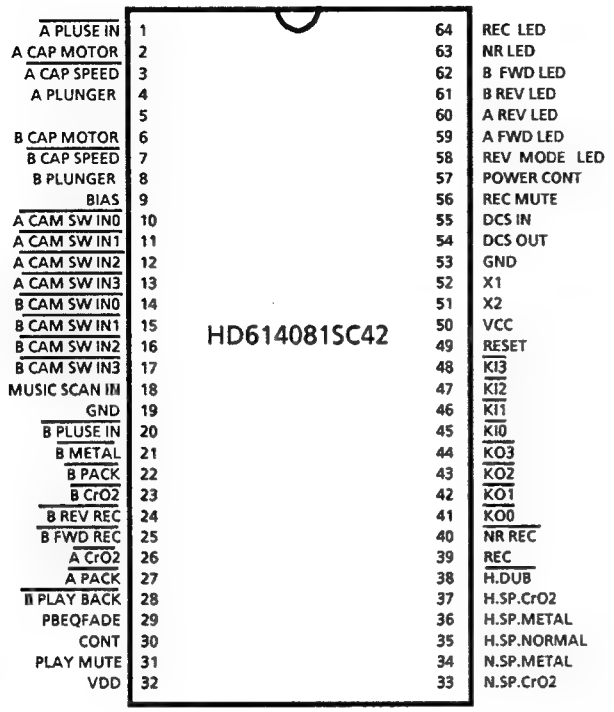
	48 (K-IN1)	47 (K-IN2)	46 (K-IN3)	45 (K-IN4)
44 (K-OUT1)		TIMER 1	TIMER 2	DAILY
43 (K-OUT2)	WAKE-UP /SLEEP	CLOCK ADJ	CANCEL	MEMORY
42 (K-OUT3)	UP	DOWN	PRESET UP	PRESET DOWN
41 (K-OUT4)	FM	AM	FM MODE /MUTE	

(3) Terminal Function

Pin No.	Name	I/O	Functions
1~5	G5~G1	O	FL grid control output
6~17	S1~S12	O	FL segment control output
19	-BP	—	Power supply for FL drive circuit
21	KO9	O	Key matrix output
22	FREQ.OUT	O	Test signal output
23	RM IN	I	Pull up
25	STEREO IN	I	STEREO indicator input
26	TUNED IN	I	Tuned indicator input
27	INH IN	I	Inhibit signal input
29	MUTE	O	Muting output
30	MONO	—	NC
32	VCC	—	Power supply (+5V)
33	CLK	O	Serial clock output to PLL (IC102 : LC7218).
34	DATA IN	I	Serial data input from PLL (IC102 : LC7218).
35	DATA OUT	O	Serial data output to PLL (IC102 : LC7218).
36	CE	O	Chip enable output to PLL (IC102 : LC7218).
37	KO8	O	Key matrix output
41~44	KO4~KO1	O	Key matrix output
45~48	KI4~KI1	I	Key matrix input
49	RST IN	I	Reset signal input
50	TEST	—	Connect to Vcc
51	OSC 1	I	Clock oscillation input
52	OSC 2	O	Clock oscillation output
53	GND	—	GND
54	DCS OUT	O	COMPULINK signal output
55	DCS IN	I	COMPULINK signal input
57~64	G13~G6	O	FL grid control output

■ HD614081SC42 (IC491) : Deck System Controller

1. Terminal Layout



2. Key Matrix

	KEY IN 0	KEY IN1	KEY IN2	KEY IN 3
KEY OUT 0	A ◀	A ◀◀	A ▶▶	A ▶
KEY OUT 1	B ◀	B ◀◀	B ▶▶	B ▶
KEY OUT 2	A ■	B ■	B ●	B ❚❚
KEY OUT 3	A ▶▶ B	NR	REV MODE	CD D. REC

3. Pin Function

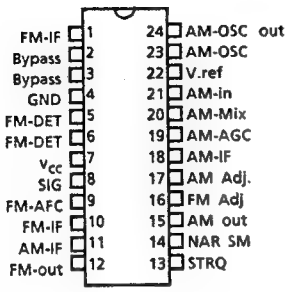
Pin NO.	symbol	I/O	Function and Operations	Pin NO.	symbol	I/O	Function and Operations
1	A PULSE IN	I	A deck reel pulse input	33	N.SP.CrO2	O	"H" with normal speed and CrO2 position
2	A CAP MOTOR	O	Capstan motor control	34	N.SP.METAL	O	"H" with normal speed and Metal position
3	A CAP SPEED	O	Capstan speed control	35	H.SP.NORMAL	O	"H" with high speed and normal position
4	A PLUNGER	O	Plunger Control	36	H.SP.METAL	O	"H" with high speed and Metal position
5		-	Non connection	37	H.SP.CrO2	O	"H" with high speed and CrO2 position
6	B CAP MOTOR	O	Capstan motor control	38	H.DUB	O	High speed dubbing control signal output
7	B CAP SPEED	O	Capstan speed control	39	REC	O	NR /Normal REC control signal output
8	B PLUNGER	O	Plunger Control	40	NR REC	O	REC / PB control signal output
9	BIAS	O	BIAS Control	41	KO0	O	Key matrix output 0
10	A CAM SW IN0	I	A CAM SW input	42	KO1	O	Key matrix output 1
11	A CAM SW IN1	I	A CAM SW input	43	KO2	O	Key matrix output 2
12	A CAM SW IN2	I	A CAM SW input	44	KO3	O	Key matrix output 3
13	A CAM SW IN3	I	A CAM SW input	45	KI0	I	Key matrix input 0
14	B CAM SW IN0	I	B CAM SW input	46	KI1	I	Key matrix input 1
15	B CAM SW IN1	I	B CAM SW input	47	KI2	I	Key matrix input 2
16	B CAM SW IN2	I	B CAM SW input	48	KI3	I	Key matrix input 3
17	B CAM SW IN3	I	B CAM SW input	49	RESET	I	Reset signal input
18	MUSIC SCAN IN	I	Music scan signal input	50	VCC	-	Power supply
19	GND	-	Ground	51	X2	I	Clock oscilator input
20	B PLUSE IN	I	B deck reel pulse input	52	X1	O	Clock oscilator output
21	B METAL	I	B deck metal tape detect switch input	53	GND	-	Ground
22	B PACK	I	B deck pack detection input	54	DCS OUT	O	DCS signal output
23	B CrO2	I	B deck CrO2 tape detection switch input	55	DCS IN	I	DCS signal input
24	B REV REC	I	Detection of the record defeat tab	56	REC MUTE	O	Recording mute control signal output
25	B FWD REC	I	Detection of the record defeat tab	57	POWER CONT	O	Power control signal input
26	A CrO2	I	A deck CrO2 tape detection switch input	58	REV MODE LED	O	Reverse mode indicator signal output
27	A PACK	I	A deck pack detection input	59	A FWD LED	O	A FWD indicator signal output
28	B PLAY BACK	O	B deck play back control signal output	60	A REV LED	O	A REV indicator signal output
29	PBEQ	O	Play back EQ control signal output	61	B REV LED	O	B REV indicator signal output
30	FADE CONT	O	Fade control signal output	62	B FWD LED	O	B FWD indicator signal output
31	PLAY MUTE	O	PB mute signal output	63	NR LED	O	NR indicator signal output
32	VDD	-	Power supply	64	REC LED	O	Recording indicator signal output

Internal Block Diagrams of the Other ICs

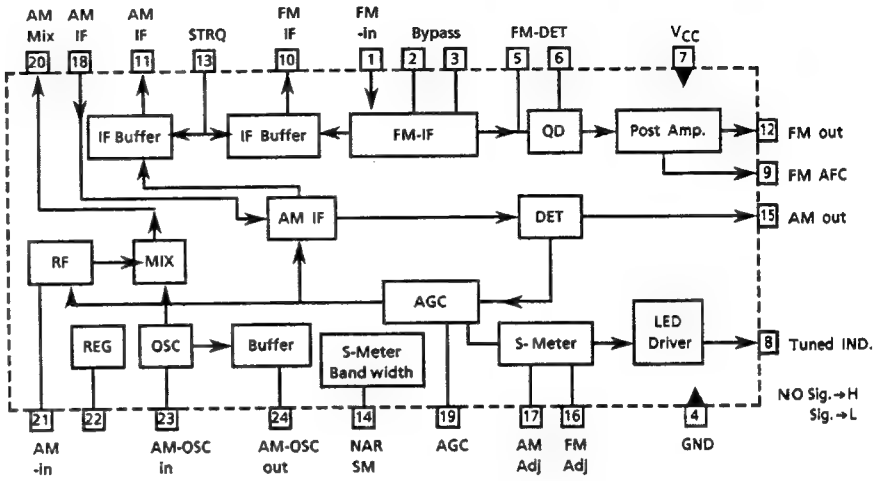
■ LA1266A (IC104) : FM AM IF AMP & detector

1. The main function descriptions
   (1) Amplify and detect of FM intermodulation frequencies.
   (2) It has local oscillator and mixer for AM, and amplify the AM-IF signal.

2. Top View



3. Block Diagram



4. Pin Function Description

Pin No.	Symbol	I/O	Functions and Operations
1	FM IF	I	This is an input terminal of FM IF Signal.
2, 3	Bypass	-	Bypass of FM IF Amp.
4	GND	-	This is the device ground terminal.
5, 6	FM DET	-	FM detect transformer.
7	V_{CC}	-	This is the power supply terminal.
8	SIGNAL	O	Mute drive and signal stop drive output when tuning. Active Low
9	FM AFC	O	This is an output terminal of voltage for FM - AFC.
10	FM IF	O	When the IF REQ signal of IC251(LC7218) applies to pin13, the signal of FM IF outputs.
11	AM IF	O	When the IF REQ signal of IC251(LC7218) applies to pin13, the signal of AM IF outputs.
12	FM out	O	FM detection output.
13	STRQ	I	The IF-signals come out from pin10 (FM-IF) or pin11 (AM-IF) while this terminal goes to "High".
14	NAR SM	-	Control the Band-width of AM signal meter.
15	AM out	O	AM detection output.
16	FM Adj	-	For adjust the stop level (or mute level) of FM.
17	AM Adj	-	For adjust the stop level (or mute level) of AM.
18	AM-IF	I	Input of AM IF Signal.
19	AM-AGC	I	This is an AGC voltage Input terminal for AM.
20	AM-MIX	O	This is an output terminal for AM mixer.
21	AM-IN	I	This is an input terminal for AM RF Signal.
22	V.REF	-	Control the Band-width of FM signal meter.
23	AM-OSC	-	This is a terminal of AM Local oscillation circuit.
24	AM-OSC out	O	AM Local Oscillation Signal output.

■ LA3401 (IC105) : FM MPX Demodulator

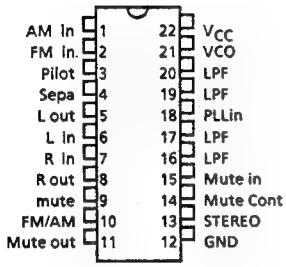
1. The main function descriptions

(1) Demodulate the FM Multiplex Signal (Stereo signal).

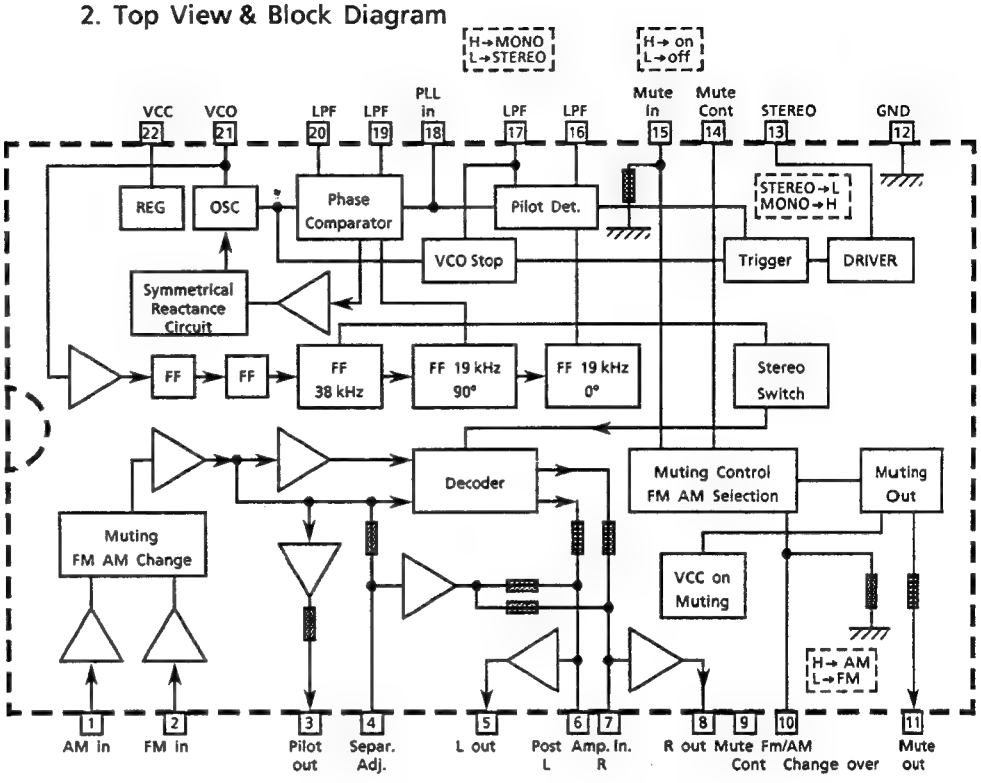
(2) When receiving FM Stereo Signal, it outputs the signal for indicator.

(3) AM/FM Audio Amplifier.

(1) Terminal Layout



2. Top View & Block Diagram



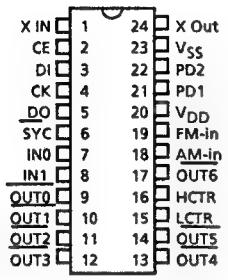
3. Pin Function Description

Pin No.	Symbol	I/O	Functions and Operations
1	AM in		This is an input terminal for AM detection signal.
2	FM in		This is an input terminal for FM detection signal.
3	Pilot out		Output of MPX pilot signal (Connect to Pin18).
4	Sepa. Adj.		Separation adjustment.
5	L. out	O	Left channel signal output.
6	L	O	Reversal output of Pin5.
7	R	O	Reversal output of Pin8.
8	R out	O	Right channel signal output
9	Mute Cont		The mute time is controlled by the connected capacitor when turning the power switch on.
10	FM/AM	I	Change over the FM/AM input. "H" : AM, "L" : FM
11	Mute out	---	Not use
12	GND		Ground terminal.
13	Stereo	O	Stereo indicator output. Stereo : "L", Mono : "H"
14	Mute Cont		The mute time is controlled by the connected capacitor when changing over the FM/AM.
15	Mute in	I	MutE signal input. "H" : Mute on, "L" : Mute off.
16	LPF		Low pass filter of pilot detector.
17	LPF		While this terminal goes to "H", the VCO stop.
18	Pilot in		PLL input.
19	LPF		Low-pass filter of PLL.
20	LPF		Low-pass filter of PLL.
21	VCO		Voltage controlled oscillator terminal.
22	V_{CC}		Power supply.

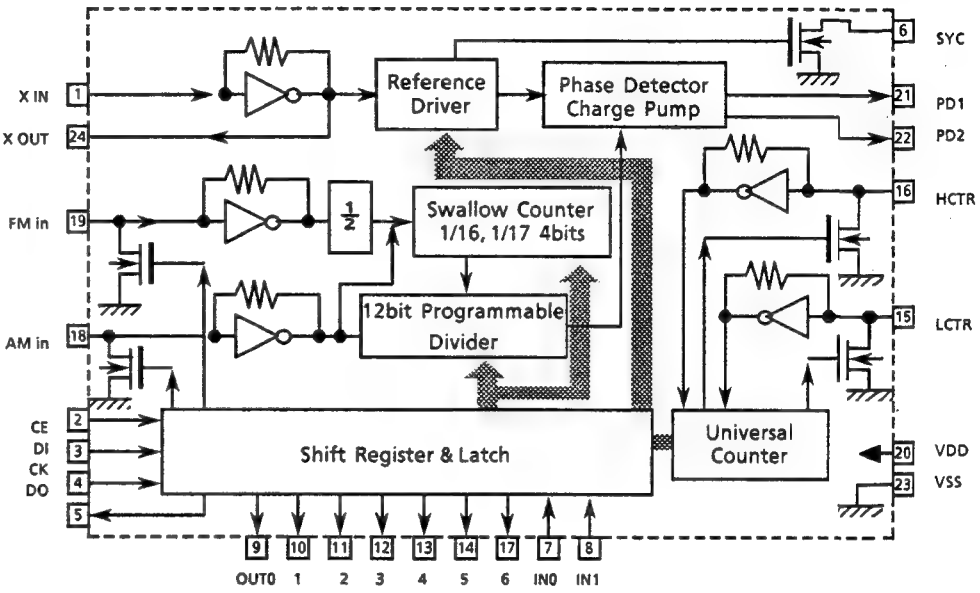
■ LC7218 (IC102) : PLL Synthesizer

1. The main function descriptions
   (1) It makes the local oscillation frequency by the control data from IC102.
   (2) Decode the control signal and transmit the signal for receiving conditions.
   (3) For the best tuning, count the internal-frequency and transmit the data to IC102.

2. Terminal Layout



3. Block Diagram



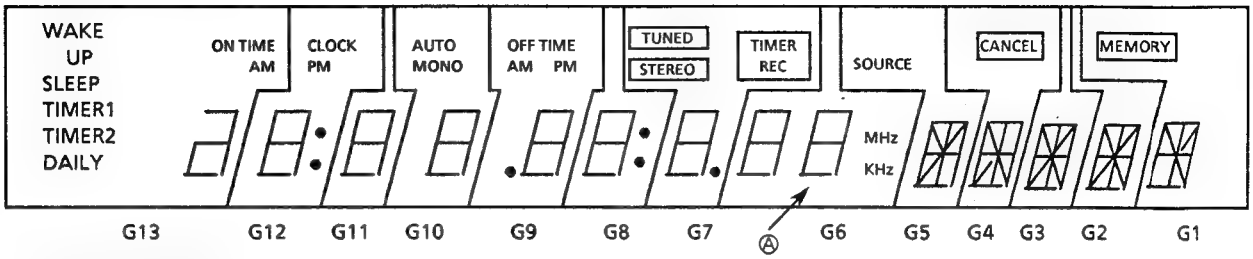
4. Pin Function Description

Pin No.	Symbol	Name	I/O	Functions and Operations
1, 24	X in, X out	X in, X out	I/O	Crystal oscillator (7.2MHz).
2	CE	CE	I	Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data.
3	DI	DI	I	Receive the control data from the controller (IC421).
4	CK	CK	I	This clock is used to synchronize data when transmitting the data of DI and DO.
5	DO	DO	O	Transmit the data from LC7218 to the controller which is synchronized with CK.
6	SYC	SYC	—	Not use
7	IN0	Tuned in	I	Receive the tuned signal from IC101 (LA1266A).
8	IN1	Stop in	I	Not use
9	OUT 0	POWER	—	Not use
10	OUT 1	QSC	—	Not use
11	OUT2	MONO	—	MONO
12	OUT3	FM	O	It is "L" on FM mode.
13	OUT4	MW	O	It is "L" on AM mode.
14	OUT5	LW	—	Not use
15	LCTR	AM-IF	I	Universal counter input for AM-IF from IC101 (LA1266A).
16	HCTR	FM-IF	I	Universal counter input for FM-IF from IC101 (LA1266A).
17	OUT6	IF REQ	O	Output the "IF-signal request" to IC101 when the pin-7 (tuned in) goes to "H".
18	AM in	AM osc	I	Input the local oscillator signal of AM.
19	FM in	FM osc	I	Input the local oscillator signal of FM.
20	V_{DD}	V_{DD}	—	This is a terminal of power supply.
21	PD1	PD1	O	PLL charge pump output : When the local oscillator signal frequency is higher than the reference frequency, high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating.
22	PD2	PD2	O	Not use
23	Vss	Vss	—	GND

Internal Wiring of the FL Display Tube

■ ELU0001-101:(FL201)

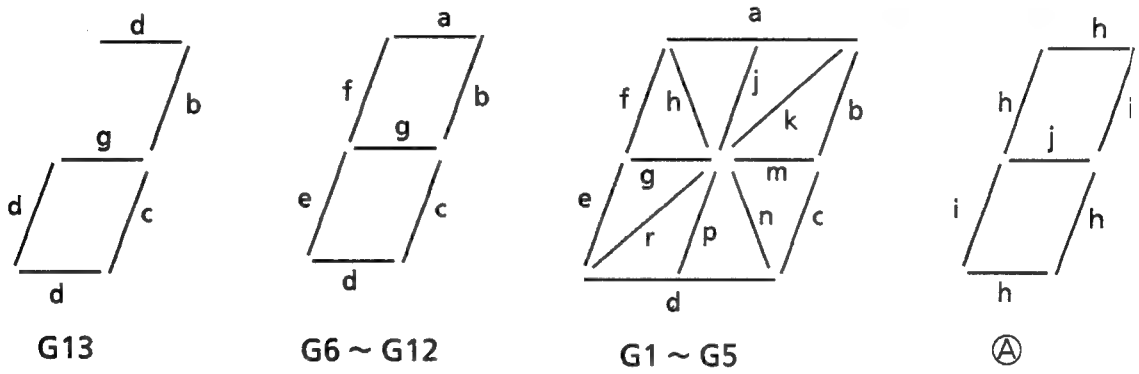
1. Grid Assignment



2 .Pin Connections

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CONNECTION	F1	F1	NP	NC	G13	S1	S2	G13	S3	S4	G12	G12	S5	G11	S6	G10	S7	G9	G9	S8	S9	G8	S10
PIN NO.	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
CONNECTION	G7	S11	G6	S12	NC	NC	NC	G6	NC	G5	NC	G4	G4	NC	G3	NC	G2	NC	G1	NC	NP	F2	F2

【Note】 F:Filament S:Segment G:Grid NP:No Pin NC:Non Connection



3.Anode Connections

	G13	G12	G11	G10	G9	G8	G7	G6	G5	G4	G3	G2	G1
S1	d	d	d	d	d	d	d	d	d	d	d	d	d
S2	—	e	e	e	e	e	e	e	e	e	e	e	e
S3	c	c	c	c	c	c	c	c	c	c	c	c	c
S4	g	—	—	—	—	—	—	kHz	r	r	r	r	m
S5	b	• •	—	—	•	• •	•	MHz	k	n	n	n	n
S6	DAILY	—	—	—	AM	—	STEREO	i	j,p	j,p	j,p	j,p	j,p
S7	TIMER2	g	g	g	g	g	g	g	g,m	g,m	g,m	g,m	g
S8	TIMER1	f	f	f	f	f	f	f	f	f	f	f	f
S9	SLEEP	b	b	b	b	b	b	b	b	b	b	b	b
S10	WAKE UP	a	a	a	a	a	a	a	a	a	a	a	a
S11	AM	PM	—	MONO	PM	—	TUNED	j	h	h	h	h	h,k
S12	ON TIME	CLOCK	—	AUTO	OFFTIME	—	TIMER REC	h	SOURCE	CANCEL	k	k	MEMORY

Disassembly Procedures

(1) Removing the Top Cover

1. Remove the 2 black screws from the backside , then remove the 4 black screws on both ends .
2. Raise the top cover's rear part and remove the it to the upper rear direction .

(2) Removing the Front Panel

1. Remove the 2 black screws ① fixing the panel from the bottom , then the 2 black screws ② fixing the mechanism . (Fig.2)
2. Remove all connectors from the front panel.

(3) Removing the Cassette Mechanism

1. Remove the 4 blue screws ③ fixing the cassette mechanism .(Fig.3)

Reference : The screw fixing the upper side is a double-thread screw for plastics.

Note : The cassette mechanism is grounded through the bottom cover removed (especially when checking the signal system) , be sure to ground the chassis by using an alligator clip or other suitable gadget . Also ,as this cassette mechanism is designed for pack sensing , remember that it cannot be without any tape .

(4) Removing the Cassette Holder

1. Remove the gear oil damper fixing with a double-thread screw.
2. Remove the spring from the bracket..
3. Press the holder and remove the door lock.

(5) Removing the Front SW P.C.B

1. Remove the front panel.
2. Remove the 4 small screws ④ fixing the front SW P.C.B , then the 3 small screws ⑤ .(Fig.3)

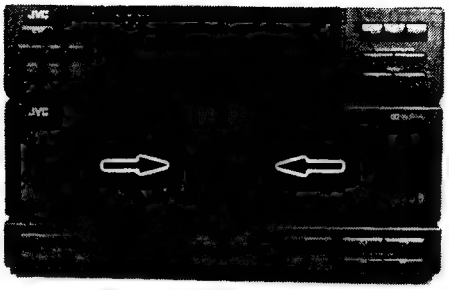
(6) Removing the Mechanism A / Mechanism B Control P.C.B

1. Remove the cassette mechanism .
2. Remove the bracket screw fixing the cassette holder .
3. Remove the 2 small screws fixing the Control SW P.C.B .

Note : When refitting the front SW P.C.B on mechanism A / mechanism B control SW P.C.B , be sure to confirm that their buttons and LEDs are fitted properly into their holes.

(7) Removing the Tuner P.C.B

1. Remove the black screw fixing the rear panel's antenna terminal.
2. Remove the 4 white screws fixing the tuner P.C.B.
3. The tuner P.C.B can now be raised .



The cassette door, in open state, can be slide and disengaged in the arrow's direction. Remove the cassette door as when adjusting the head's angle. (Refer to Fig. 1)

Fig. 1

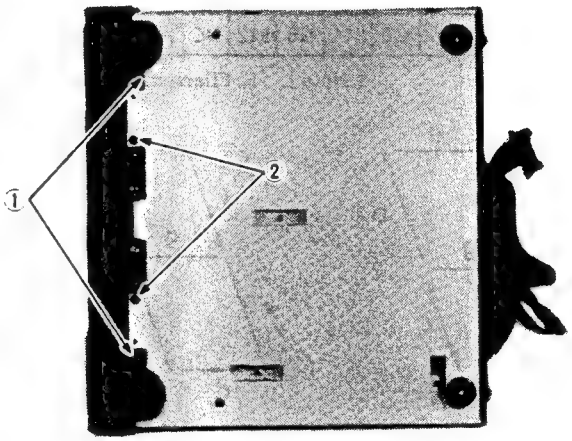


Fig. 2

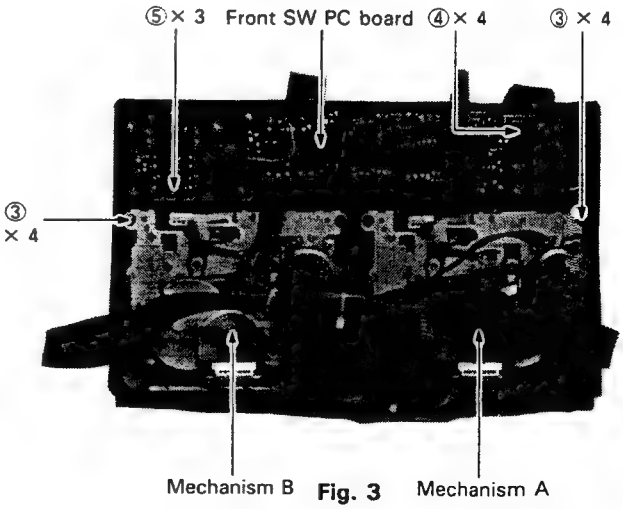


Fig. 3

(8) Removing the Cassette Amp P.C.B

1. Remove the 2 black screws fixing the rear panel's underside , then disengage the rear panel.
2. Remove the 3 white screws fixing the Cassette Amp P.C.B .
3. The Cassette Amp P.C.B , together with the rear panel , can now be raised.

(9) Removing the Cassette Mechanism Parts

■ Head Assembly

Remove the 2 screws ① fixing the head assembly. When removing only the head block , remove the 2 screws fitted from the head gap side . (The boned part can be removed with ease by heating.)

When assembling

1. Fit the head lever into the position shown in the diagram.
2. Adjust the head , then bond and lock the head assembly.

■ Pinch roller arm assembly (FWD/REV)

1. Remove the pawl Ⓐ fixing the Pinch roller arm assembly.
2. Detach the Pinch roller return spring (small outside spring) from the hook.

■ Reel Disc Assembly

Detach the triangular pyramid-shaped reel disc stopper from the assembly's tip (Use a new stopper when reassembling.)

■ Disc Revolution (Auto Stop) Sensor

Remove the screw ② fixing the sensor board. Fit the hall element by matching it to the sensor board.

■ FM Bracket and Flywheel

1. Remove the 4 screws ④ and ⑤ fixing the FM bracket.
2. Remove the FM bracket by sliding it to the left (Fig.8)
3. The belt will be disengaged. Fit the belt by the method shown in Fig.7. Next, detach the flywheel.(The washer can be removed in the direction of the pinch roller.)

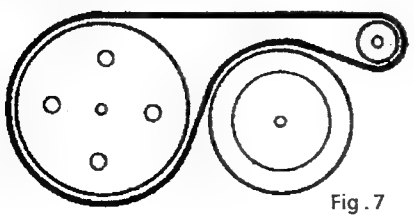


Fig . 7

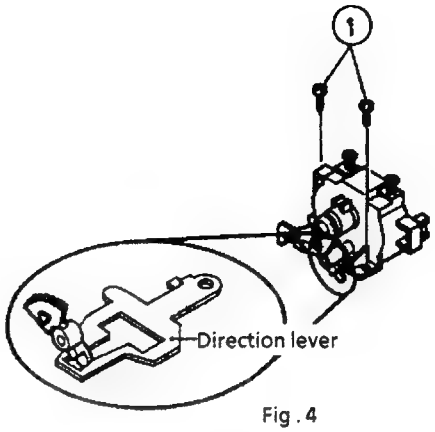


Fig . 4

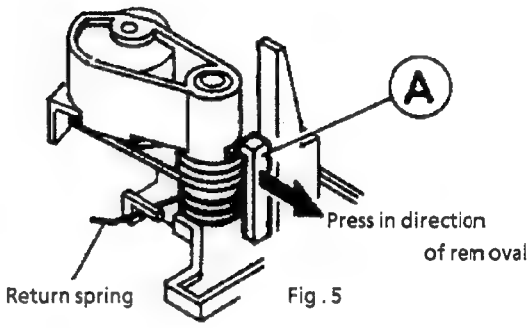


Fig . 5

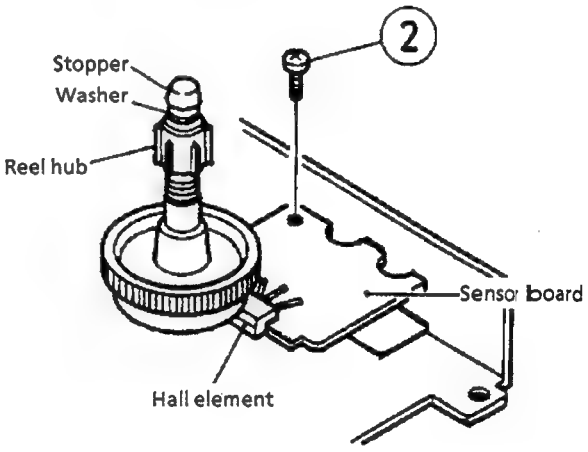


Fig . 6

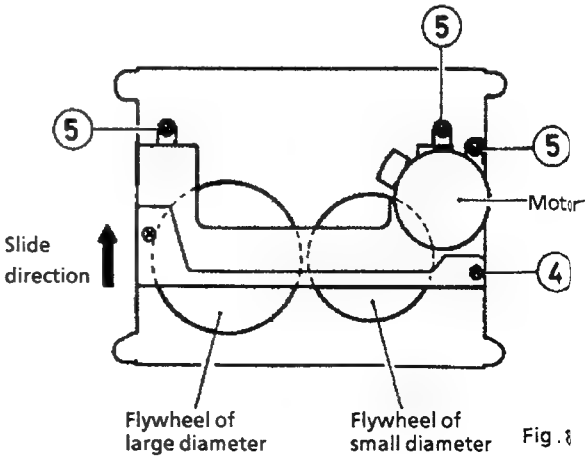


Fig . 8

■ Reel Base Unit Assembly

1. Remove the FM bracket, then detach the flywheel.
2. Remove the 2 screws ⑥ fixing the reel base unit assembly.
3. Remove the solders from the solenoid wires of the cam switch P.C.B.

Precautions when assembling
Match the assembling places with places having the same symbols.

A and A' / B and B' > Match their grooves

C and C' / D and D' > Match the bosses of C' and D' at the periphery of the cam gear

E and E' Match their grooves

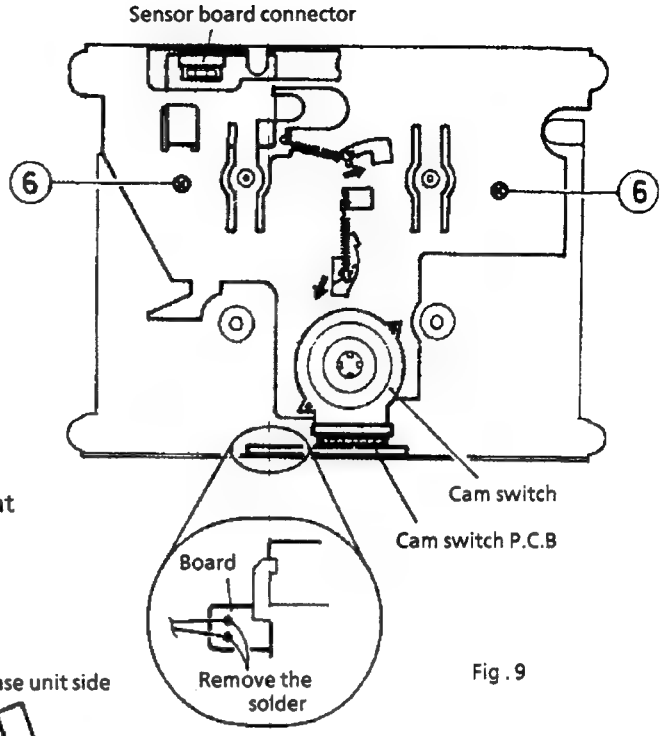


Fig . 9

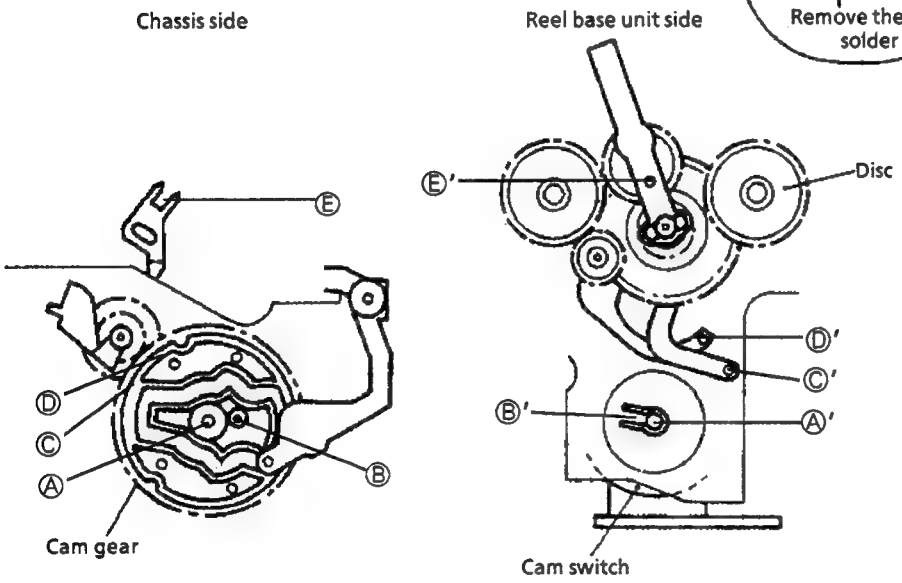


Fig . 10

■ Select Cam Gear

1. Remove the flywheel and reel base unit.
2. Remove the trigger lever's torsion spring .
3. Remove the trigger lever stopper ⓒ .
4. Remove the select cam gear's lock washer. (Use a new lock washer when reassembling.)

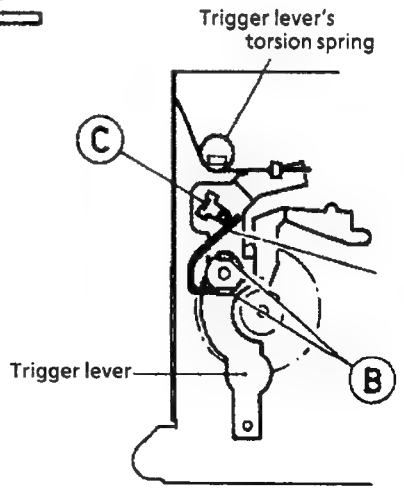
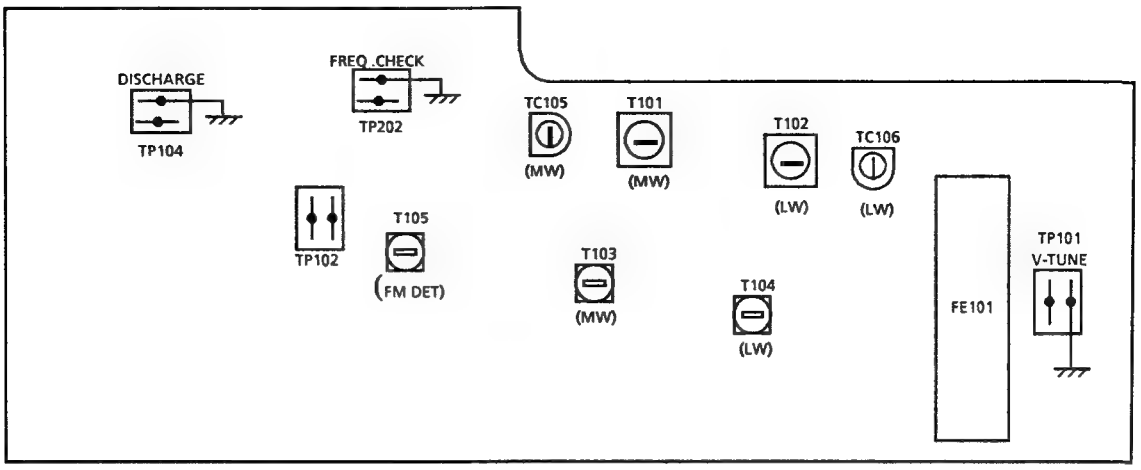


Fig . 11

FM / AM Tuner Alignment Procedures



1. FM section

Note : ( ) : Rumania,Poland and the U.S.S.R

■ FM oscillator

(1) Set the frequency display to "108.0MHz" (74.0MHz).
(2) Confirm that the FM inter-station noise is received.
(3) Confirm that the voltage of test point "TP101" becomes 8.0 ± 2.0V(7.7 ± 1.3V).
(4) Set the frequency display to "87.5MHz" (64.0MHz) and confirm the voltage of test point "TP101" becomes 1.6 ± 1.0V(2.2 ± 1.0v).

■ FM detector coil : T105

(1) Connect a digital voltmeter to test point "TP 102", and receive to "100.1MHz" (69.0MHz) signal with SSG ATT 70dB.
(2) Adjust T105 so that the digital voltmeter reads 0 ± 1.5mV.

2. MW section

Note : [ ] : The U.S.A and Canada
( ) : Australia , the U.K. and Continental Europe
{ } : Channel space 9kHz for universal version
⌈ ⌋ : Channel space 10kHz for universal version

■ MW oscillator : T103

(1) Set the frequency display to [530kHz] (522kHz) {531kHz} ⌈ 530kHz ⌋ and confirm that the voltage of test point TP101 becomes [0.9 ± 0.2V] (0.9 ± 0.2V) {1.0 ± 0.2V} ⌈ 1.0 ± 0.2V ⌋ .
(2) Set the frequency display to [1710kHz] (1629kHz) {1602kHz } ⌈ 1600kHz ⌋ and confirm that the voltage of test point TP101 becomes [8.0 ± 0.8V] (7.5 ± 0.8V){ 7.2 ± 0.7V } ⌈ 7.2 ± 0.7V ⌋ .
(3) If its voltage exceeds the allowance , adjust T103 to obtain the voltage .

■ MW antenna coil : T101

(1) Connect a loop antenna to the "AM Loop" terminal on the rear panel.
(2) Adjust T101 to obtain the best receiving sensitivity on 600kHz or 603kHz.

■ MW antenna trimmer : TC105

(1) Adjust TC105 to obtain the best receiving sensitivity on 1400kHzor 1404kHz .

3. LW section

Note : < > : Italy

■ LW oscillator : T104

(1) Set the frequency display to 144k Hz and adjust T104 so that the voltage of TP101 becomes 0.8 ± 0.4V <0.8 ± 0.1V> .
(2) Set the frequency display to 353k Hz <290kHz> and confirm that the voltage of test point TP101 becomes 8.0± 0.9V <5.7 ±0.5V>.

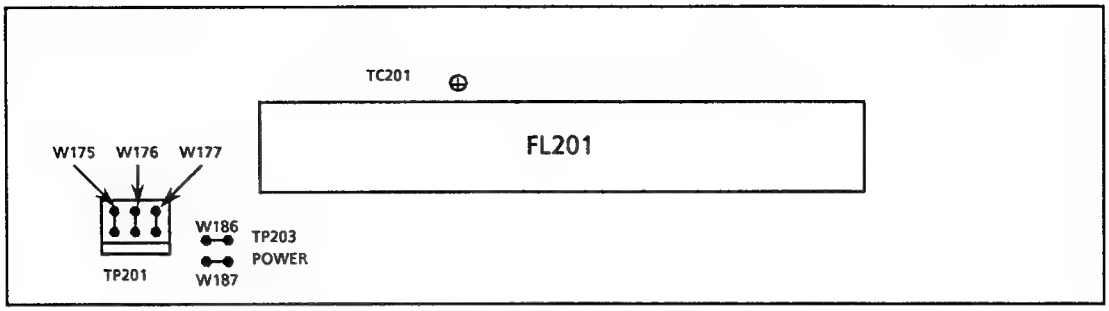
■ LW antenna coil : T102

(1) Connect a loop antenna to the "AM Loop" terminal on the rear panel .
(2) Adjust T102 to obtain the best receiving sensitivity on 164kHz <164kHz> .

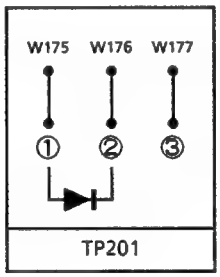
■ LW antenna trimmer : TC106

(1) Adjust TC106 to obtain the best receiving sensitivity on 353kHz <245kHz> .

Clock Generator Frequency Adjustment



1. Switch OFF the AX-MX50BK's power source,then pull out the AC plug.
2. Short circuit TP201's terminals ① and ② with the diode as shown in the accompanying diagram, then insert the AC plug into the receptacle to switch the power ON.
3. Confirm that the tuner's FL display is off, then remove the diode and connect the frequency counter to TP 202(FREQ. CHECK).
4. Adjust TC201 so that the counter becomes 34,952.5 ± 0.15 Hz.



Example :
1SS133
1SS119
1S2473

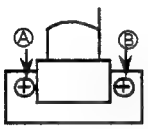
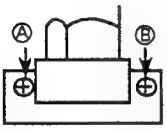
Cassette Deck Adjustment Procedures

(1) Measuring instruments for Adjustment

1. Audio frequency signal generator (0dbs output at the 600 ohm output terminal from 50Hz to 20KHz)
2. Attenuator (600 ohm impedance)
3. Electronic voltmeter
4. STANDARD TAPES
   VTT-704(head azimuth adjustment)
   VTT-712 (tape speed , wow & flutter)
   VTT-724 (Reference level)
5. Recording standard tapes
   AC-513 (CrO2), TS-5 (SF) or equivalent. (Use JVC standard tape)
6. 600-ohm resistor for attenuator matching
7. WOW & FLUTTER meter with frequency counter
8. Distortion meter with band-pass filter
9. Torque gauge : CTG-N (cassette type)
10. C-120 tape (for checking the tape running)

(2) Adjustment and repairing the mechanism

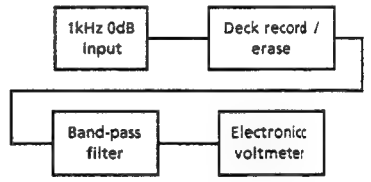
(Adjust and inspect the mechanism before adjusting the electronic circuit)

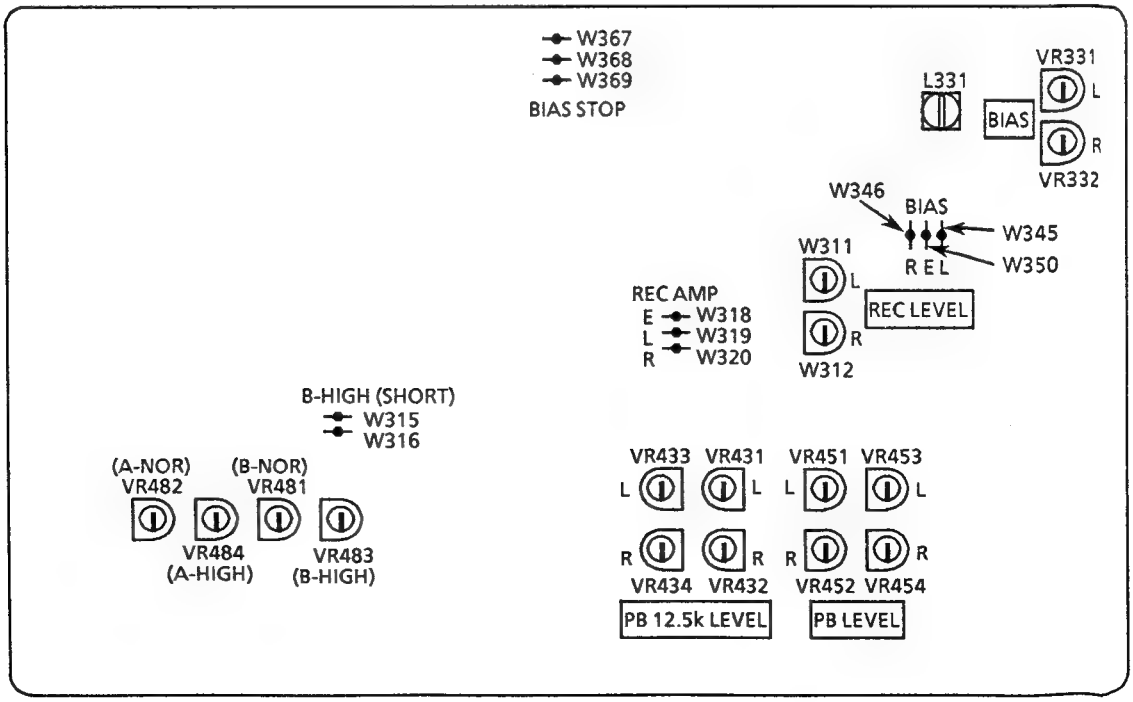
Item	Adjustment method	Standard value	Remarks
Adjusting azimuth of rec/play head	1. Connect an electronic voltmeter to the SPK OUT terminal. (about 1 volt output) 2. Play back VTT-704		1) When the specified characteristic cannot be obtained because of head wear, cut wire, excessive magnetization, etc., replace the head and adjust the head azimuth. Also, perform the adjustment of the playback level, recording bias current, recording level, etc. 2) When there is the difference of more than 3 ~ 4 dB between left and right output levels, replace the head to avoid complaints.
A mechanism 	3. Adjust screw Ⓐ so that the output of the voltmeter becomes maximum when PLAY (▶) is pressed.	Maximum	
	4. After making the adjustment,apply screw lock to prevent screws Ⓐand Ⓑcoming loose .		
B mechanism 	5. Adjust screw Ⓐso that the output of the voltmeter becomes maximum when PLAY (▶) is pressed.	Maximum	
	6. Adjust screw Ⓑ so that the output of the voltmeter becomes maximum when PLAY (◀) is pressed.	Maximum	
	7. After making the adjustment,apply screw lock to prevent screws Ⓐ and Ⓑcoming loose .		
Playback torque	Measure the torque in the playback mode using the torque measurement cassette CTG-N.	20 ~ 65 g-cm	When the standard torque cannot be obtained, clean or replace the take-up disc assembly.
Fast forward torque	Measure the torque in the fast forward mode by the above method.	60 ~ 160 g-cm	When the standard torque cannot be obtained, 1) Clean the capstan belt, rim of the fly-wheel, motor pulley, etc. 2) Change the belt, idler, etc.
Rewind torque	Measure the torque in the rewind mode by the above method.	60 ~ 160 g-cm	When the standard torque cannot be obtained, clean the motor pulley, capstan, rim of the fly-wheel, rim of the supply reel disc, etc.
Wow & flutter	Play back VTT-712 and connect the wow & flutter meter to the SPK OUT terminals , its reading should be within 0.15% (WRMS).		As a complaint may occur if the wow & flutter fluctuates by 0.1% even though it is allowed in the standard, repairing is required.

(3) Electrical Circuit Adjustments

Make the following adjustments after adjusting the head azimuth.
In principle, the adjustments should be made in the following sequence.
Set the NR switch to OFF and the BEAT CUT switch to "1".
Adjustments marked with an asterisk (*) should always be made after the head is replaced.

Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
Motor speed	1. Play back VTT-712 and connect a frequency counter to the VCR/DAT terminal.	Semi-fixed resistor on the main PC Board		Connect a wow & flutter meter with a built-in frequency counter to the VCR/DAT terminal.
	2. Normal speed Adjustment 1) Mechanism A Play back deck A and adjust the semi-fixed resistor VR481. 2) Mechanism B Play back deck B and adjust the semi-fixed resistor VR482.	VR481 VR482	3,000 ± 10 Hz	
	3. High-speed adjustment 1) Mechanism A Play back deck A and adjust the semi-fixed resistor VR483 . 2) Mechanism B Play back deck B and adjust the semi-fixed resistor VR484.	VR483 VR484	4,800 ± 20 Hz	A-Mechanism : Short-circuit W367 and W369 when performing high-speed adjustment. B-Mechanism : Short-circuit W315 and W316 of TP001 when performing high-speed adjustment, (Be sure to set the deck to the PLAY mode first before short-circuiting . Do not operate the deck while it is short-circuited.)
* 1 Playback level	Play back VTT-724 (1 kHz) and connect an electronic voltmeter between L and E of NR TP for left, or R and E for right. And then, adjust the semi - fixed resistors.	A (L) VR451 (R) VR452 B (L) VR453 (R) VR454	400mV	The playback level varies when the head is replaced so should be adjusted. Use an electronic voltmeter with an impedance of 100 kΩ or more.
* 2 Playback frequency level	Play back VTT-704 (12.5 kHz) and connect an electronic voltmeter between L and E of NR TP for left, or R and E for right. And then, adjust the semi - fixed resistors.	A (L) VR433 (R) VR434 B (L) VR431 (R) VR432	130mV	The playback frequency level varies when the head is replaced so should be adjusted. Use an electronic voltmeter with an impedance of 100 kΩ or more.
* 3 Recording bias frequency	Connect a frequency counter between W345 and W350 on ENJ - 042 - 1 , and play back a METAL tape.	L331	100 ± 5 kHz	
* 4 Recording frequency response	Record 1 kHz/12.5 kHz with the NR switch off and input 30mV to VCR /DAT terminal . While playing back these recorded signals, adjust the variation of the 10 kHz outputs from the 1kHz output to the standard value using VR331 and VR332. (Basically, adjust so that the 1 kHz and 12.5 kHz outputs are flat.)	(L)VR331 (R)VR332	0 ± 3 dB for 10 kHz with 1 kHz as the standard.	1) The recording and playback frequencies of a cassette deck are adjusted by adjusting the bias. This is because the frequency response depends more on the bias current than with an open-reel deck. 2) Perform the adjustment with normal tape and confirm that the values are within the range for metal tape.
	Note : After completing the recording level adjustment in item 4, check the recording and playback frequencies with the NR switch on. Fine adjust again if the value is 0 ± 4 dB or more at 1 kHz and 12.5 kHz.			

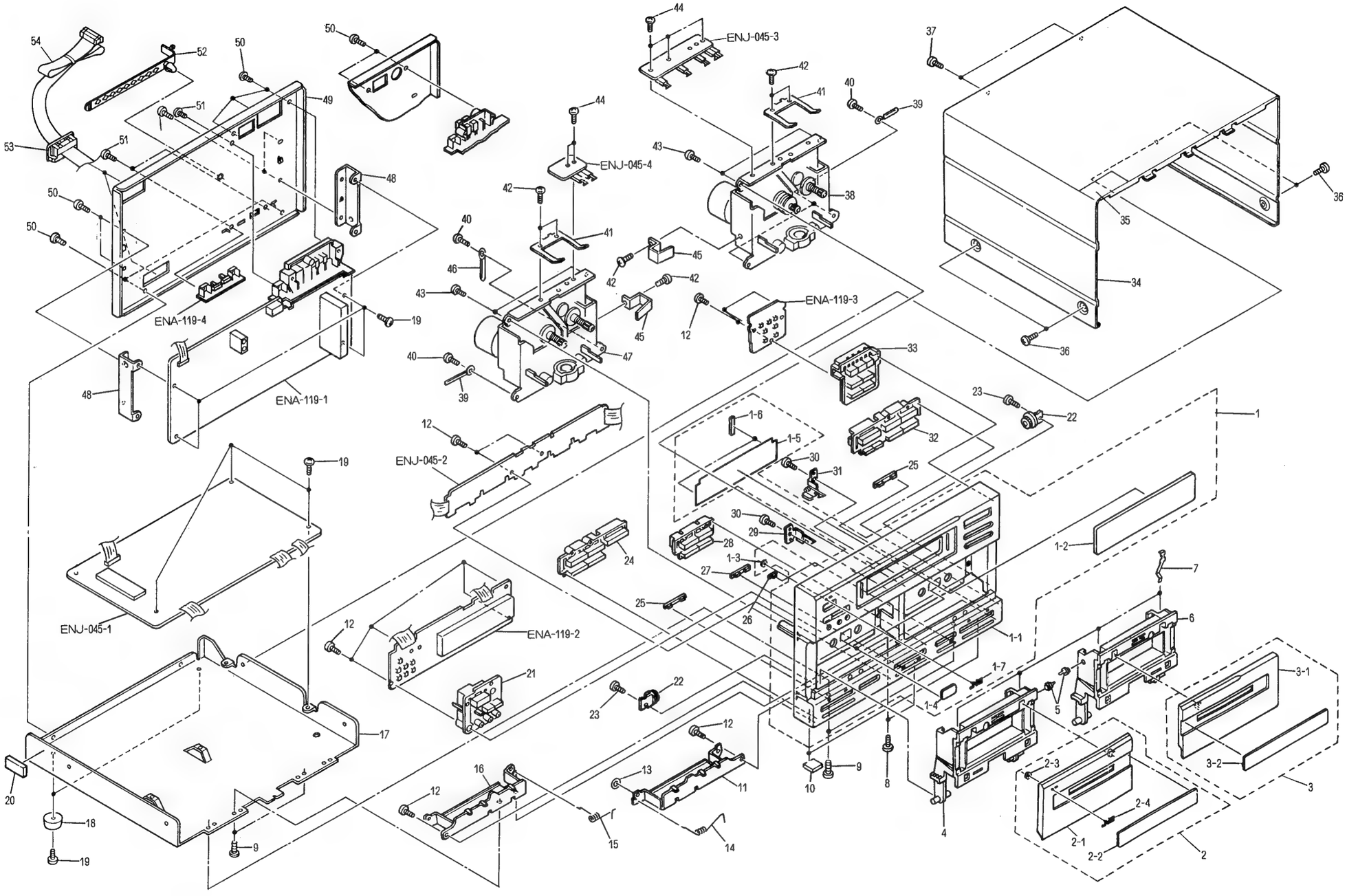
	Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
* 5	Recording Level	1) Input a 1 kHz (300mV) to VCR / DAT terminals and record on the left and right channels . 2) Connect an electronic voltmeter between L and E of NR TR for left, or R and E for right. And then, adjust the semi - fixed resistors when playing back.	(L)VR311 (R)VR312	400mV	Adjust with normal tape and make sure that the level difference is 1.5 dB or less with metal tape and that the left/right level difference is 1.0 dB or less.
* 6	Recording/ playback distortion	1) Input a 1 kHz (300mV) to VCR / DAT terminals and record it. 2) Play it back and check the out-put with a distortion meter to make sure it is the rated value.		less than 3%	Perform after the bias current and recording level adjustments.
7	Recording/ playback S/N ratio	1) Input a 1 kHz (300mV) to VCR / DAT terminals and record it. While recording, remove the input and record without a signal. 2) Play back and use an electronic voltmeter to compare the 0 dB recording output and the out-put of the recording without a signal to make sure this is the rated value.		more than 40 dB	
8	Erase ratio check	1) Input a 1 kHz (300mV) to VCR / DAT terminals and record it. 2) Rewind and erase part of the recorded section. 3) Compare the outputs of the recorded and erased sections using an electronic voltmeter.		more than 55 dB	Connect a 1 kHz band-pass filter between the deck and electronic Voltmeter When making the adjustment.
					
9	Auto-stop check	When playing back and recording, make sure to operate AUTO STOP.			



PARTS LIST

Contents

General Exploded View and Parts List



■ Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-DRMX50BKE(S	Front Panel Ass'y	1		
	1-1	E12263-004SM	Front Panel	1		
	1-2	E306757-002	Window Screen	1		
	1-3	E60912-003	Speed Nut	1		
	1-4	E69777-003	Reflector Plate	2		
	1-5	E75960-001SM	FL Screen	1		
	1-6	EXO020003N30S	Felt Spacer	2		
	1-7	PQ42561	JVC Mark	1		
	2	E306747-002SA	Cassette Lid Ass'y	1	A	
	2-1	E306747-002SM	Cassette Lid	1	A	
	2-2	E306759-001	Cassette Window	1	A	
	2-3	E60912-003	Speed Nut	1	A	
	2-4	PQ42561	JVC Mark	1	A	
	3	E306749-002SA	Cassette Lid Ass'y	1	B	
	3-1	E306749-002SM	Cassette Lid	1	B	
	3-2	E306759-001	Cassette Window	1	B	
	4	E26582-006SM	Cassette Holder	1	A	
	5	E75600-001	Shaft	2		
	6	E26583-005SM	Cassette Holder	1	B	
	7	E406085-001	Cassette Spring	4		
	8	SDST3006Z	Screw	2		
	9	SDST3006M	Screw	4		
	10	E75896-001SM	Felt Spacer	2	for Front Foot	
	11	E306581-002SM	Holder Bracket	1	Right	
	12	SDSF2608Z	Screw	11		
	13	E73967-007SM	Spacer	1	for Holder Bracket (Right)	
	14	E74932-002SM	Holder Spring	1	Right	
	15	E74931-002SM	Holder Spring	1	Left	
	16	E306540-002SM	Holder Bracket	1	Left	
	17	E12162-001SM	Chassis Base	1		
	18	E47227-029	Foot	2	Rear	
	19	SBSG3008N	Screw	9		
	20	EXO020010R35S13	Spacer	1	for Chassis Base (Left)	J, C
	21	E306532-001	Push Button	1	Timer	
	22	E305654-003	Damper Ass'y	2		
	23	SBSF3010Z	Screw	2	for Damper Ass'y	
	24	E306534-001	Push Button	1	Play A	
	25	E75734-001	Indicator	2	Play A, B	
	26	E75736-001	Indicator	1	Rec	
	27	E75735-001	Indicator	1	Dolby	
	28	E306538-003	Push Button	1	Dolby	
	29	E75396-001	Lock Cam	1	Left	
	30	SBSF3006M	Screw	2		
	31	E75397-002	Lock Cam	1	Right	
	32	E306536-001	Push Button	1	Play B	
	33	E306530-002	Push Button	1	Band	J, C, U, A
		E306530-003	Push Button	1	Band	Except J, C, U, A
	34	E26703-004	Metal Cover	1		
	35	E67000-014	Caution Label	1		
	36	SDSG3006M	Screw	4		
	37	SDSG3010M	Screw	2		
	38	————	Cassette Mechanism Ass'y	1	See page 2-7 (B Mechanism)	
	39	E72018-001	Wire Clamp	2		
	40	SBST3006C	Screw	4		
	41	VKY4279-003	Pack Spring	2		

⚠: Safety Parts

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	42	SDST2604Z	Screw	6		
	43	SBSF3008C	Screw	4		
	44	VKZ4601-001	Screw	5		
	45	E75216-004	Spring	2		
	46	PU49485-3	Wire Clamp	1		
	47	————	Cassette Mechanism Ass'y	1	See page 2-7 (A Mechanism)	
	48	E305919-003SM	Circuit Board Bracket	2		
	49	E26711-029SM	Rear Panel	1		J, C
		E26711-030SM	Rear Panel	1		U
		E26711-031SM	Rear Panel	1		A
		E26711-032SM	Rear Panel	1		Except J, C, U, A
	50	E73273-006	Special Screw	9		J, C, U, A
		E73273-006	Special Screw	8		Except J, C, U, A
	51	SBST3008M	Screw	3		
	52	E304880-001	Cord Holder	1		
	53	E305920-001	Cord Holder	2		
	54	EWP902-016	Plug Cord Ass'y	1	JA311 (15Pin)	
		EWP902-015	Plug Cord Ass'y	1	FW001 (11Pin)	
	—	E61029-009	Number Label	1		

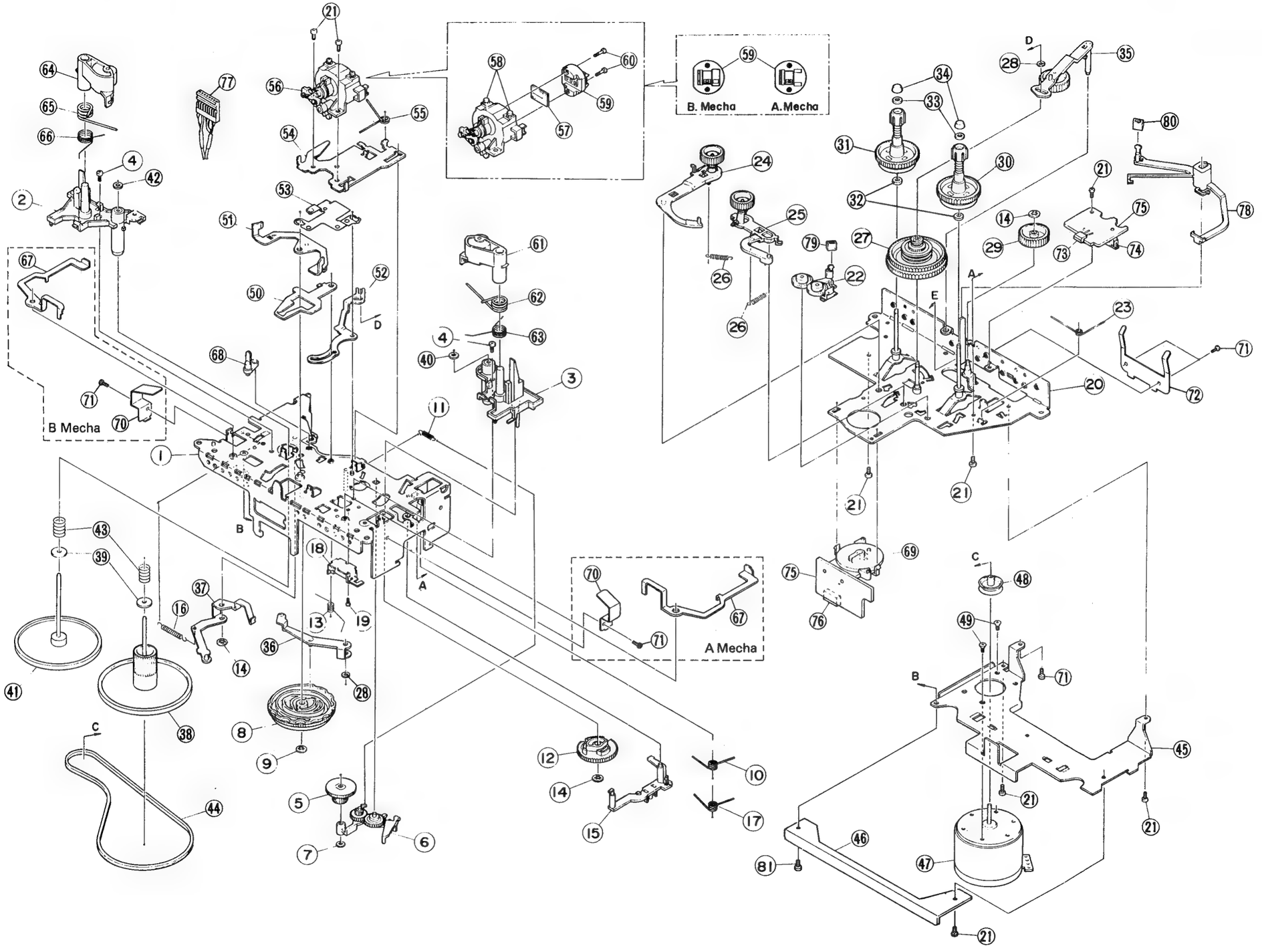
⚠: Safety Parts

The Marks Designated Areas

J·····the U.S.A.
C·····Canada
A·····Australia
G·····Germany
GI·····Italy
BS·····the U.K.
E, EF·····Continental Europe
V·····East Europe
U·····Universal Type
VX·····Poland, Soviet Union and Rumania
No mark indicates all areas.

Cassette Mechanism Ass'y and Parts List

シンボルNo. M2MM



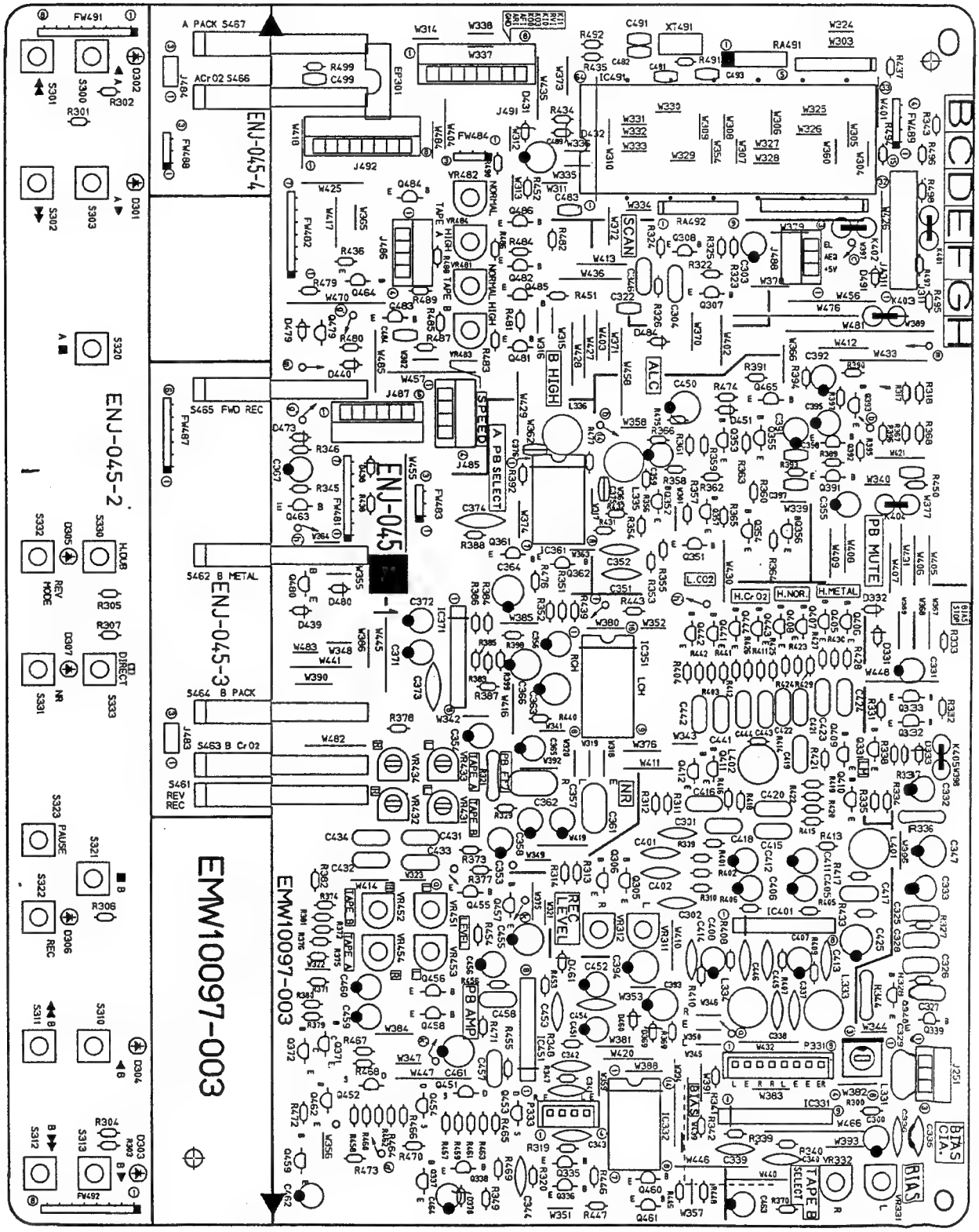
■ Cassette Mechanism Parts List

Item	Part Number	Part Name	Q'ty	Description	Areas
1	VKL2470-00L	Chassis Base Ass'y	1		
2	VKS2192-00B	Housing	1	Left	
3	VKS2193-00E	Housing	1	Right	
4	SDST2605Z	Screw	2		
5	VKR3168-002	Geneva Gear	1		
6	VKS5249-00F	Select Arm Ass'y	1		
7	WDL214025-4	Washer	1		
8	VKS2194-003	Drive Cam Gear	1		
9	VKZ4036-002	Flat Push Nut	1		
10	VKW3006-195	Torsion Spring	1		
11	VKW3002-258	Torsion Spring	1		
12	VKS2195-002	Select Cam Gear	1		
13	VKW4825-004	Torsion Spring	1		
14	VKZ4036-001	Flat Push Nut	3		
15	VKS3414-002	Trigger Lever	1		
16	VKW3002-266	Spring	1		
17	VKW3006-203	Spring	1		
18	VGP1601-002	Solenoid	1		
19	VKZ4539-003	Screw	1		
20	VKL2471-00E	Reel Base Ass'y	1		
21	SDST2004Z	Screw	9		
22	VKS5262-00J	Pickup Arm Ass'y	1		
23	VKW3006-197	Torsion Spring	1		
24	VKS5217-00E	FF Arm Ass'y	1		
25	VKS5218-00D	Rew Lever Ass'y	1		
26	VKW3002-260	Spring	2		
27	VKR3166-00H	Clutch Ass'y	1		
28	WDL163525-4	Washer	2		
29	VKR4582-001	P.Connect Gear	1		
30	VKR4519-00A	Reel Disc Ass'y	1		
31	VKR4518-00A	Reel Disc Ass'y	1		
32	VKZ4003-010	Felt	2		
33	VKR4170-001	Ring	2		
34	VKS4131-001	Reel Stopper	2		
35	VKS5221-00F	T-UP Arm Ass'y	1		
36	VKL6647-001	P/R ACT Lever	1		
37	VKM3248-004	Play Arm	1		
38	VKF3161-00F	Flywheel Ass'y	1	Front	
39	VKZ4035-015	Washer	2		
40	VKZ4035-009	Washer	1		
41	VKF3171-00A	Flywheel Ass'y	1	Rear	
42	Q03093-527	Washer	1		
43	VKW4909-001	COMP. Spring	2		
44	VKB3000-134	Belt	1		
45	VKM3345-008	F.M. Bracket	1		
46	VKM3325-003	Support Bracket	1		
47	MMI-6H2LWK	D.C. Motor	1		
48	VKR4583-002	Motor Pulley	1		
49	SSSP2606Z	Screw	2		
50	VKL6648-00A	DIR. Lever Ass'y	1		
51	VKM3249-001	P/R Lever	1		
52	VKL6650-003	T-UP Lever	1		
53	VKY4570-003	Spring Plate	1		
54	VKM3250-004	Head Base	1		
55	VKW3006-201	Spring	1		
56	VKS3349-00F	Head Mount Base Ass'y	1		
57	VYTH468-001	Spacer	1		
58	VKZ4514-001	Screw	2		
59	YK10P-AS406	P.Head	1	A Mechanism	
	YK14R-AS421	R/P & E.Head	1	B Mechanism	
60	VKZ4291-005	Head Screw	2		
61	VKP4208-00C	P.R. Arm Ass'y	1	Right	
62	VKW4833-001	Torsion Spring	1		
63	VKW3008-028	Torsion Spring	1		
64	VKP4209-00C	P.R.Arm Ass'y	1	Left	
65	VKW4833-002	Torsion Spring	1		
66	VKW3008-024	Torsion Spring	1		
67	VKL6028-004	Door Safety	1	A Mechanism	
	VKL5492-003	Door Safety	1	B Mechanism	
68	VKS4512-003	Guide Post	1		
69	VKZ4549-00A	Cam Switch	1		
70	E75216-002	Spring	1		
71	SDST2604Z	Screw	3		
72	VKY4279-002	Pack Spring	1		
73	DN6851A	Hall IC	1		
74	E04365-003S	Connector	1		
75	VMW2741-001	Printed Board	1		
76	VMC0007-007	Connector	1		
77	VDM9149-001M-A	Connector Wire	1	A Mechanism	
	VDM2187-MB02	Connector Wire	1	B Mechanism	
78	VKS3442-002	Brake Arm	1		
79	VKZ4129-001	Brake Rubber	1		
80	VKZ4157-001	Brake Rubber	1		
81	SDST2006Z	Screw	1		

Printed Circuit Board Ass'y and Parts List

■ **ENJ-045** □ **Cassette PC Board Ass'y**

Note : ENJ-045 □ varies according to the areas employed. See note (1) when placing an order.



Note(1)

PC Board Ass'y	Designated Areas
ENJ-045 [B]	the U.S.A., Canada
ENJ-045 [C]	Universal Type, Australia, the U.K., Continental Europe, East Europe, Poland, Soviet Union and Rumania
ENJ-045 [D]	Germany, Italy

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q305	2SD2144S(VW)	SILICON	ROHM	
	Q306	2SD2144S(VW)	SILICON	ROHM	
	Q307	2SC1740S(R,S)	SILICON	ROHM	
	Q308	2SC1740S(R,S)	SILICON	ROHM	
	Q331	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q332	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q333	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q335	DTC144ES	SILICON	ROHM	
	Q336	DTC144ES	SILICON	ROHM	
	Q337	DTC144ES	SILICON	ROHM	
	Q338	DTC144ES	SILICON	ROHM	
	Q339	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q340	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q351	2SC1740S(R,S)	SILICON	ROHM	
	Q352	2SC1740S(R,S)	SILICON	ROHM	
	Q353	2SC1740S(R,S)	SILICON	ROHM	
	Q354	2SC1740S(R,S)	SILICON	ROHM	
	Q355	2SC1740S(R,S)	SILICON	ROHM	
	Q356	2SC1740S(R,S)	SILICON	ROHM	
	Q357	2SC1740S(R,S)	SILICON	ROHM	
	Q361	DTC144ES	SILICON	ROHM	
	Q362	DTC144ES	SILICON	ROHM	
	Q371	2SD2144S(VW)	SILICON	ROHM	
	Q372	2SD2144S(VW)	SILICON	ROHM	
	Q391	2SD2144S(VW)	SILICON	ROHM	
	Q392	2SD2144S(VW)	SILICON	ROHM	
	Q393	DTA114YS	SILICON	ROHM	
	Q405	DTC144TS	SILICON	ROHM	
	Q406	DTC144TS	SILICON	ROHM	
	Q407	DTC144TS	SILICON	ROHM	
	Q408	DTC144TS	SILICON	ROHM	
	Q409	DTC144TS	SILICON	ROHM	
	Q410	DTC144TS	SILICON	ROHM	
	Q411	DTC144TS	SILICON	ROHM	
	Q412	DTC144TS	SILICON	ROHM	
	Q441	DTC144TS	SILICON	ROHM	
	Q442	DTC144TS	SILICON	ROHM	
	Q443	DTC144TS	SILICON	ROHM	
	Q444	DTC144TS	SILICON	ROHM	
	Q451	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q452	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q453	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q454	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q455	DTC114YS	SILICON	ROHM	
	Q456	DTC114YS	SILICON	ROHM	
	Q457	DTC114YS	SILICON	ROHM	
	Q458	DTC114YS	SILICON	ROHM	
	Q459	DTC114YS	SILICON	ROHM	
	Q460	2SA933S(R,S)	SILICON	ROHM	
	Q461	DTA114YS	SILICON	ROHM	
	Q462	DTC144ES	SILICON	ROHM	
	Q463	2SD2144S(VW)	SILICON	ROHM	
	Q464	DTC114ES	SILICON	ROHM	
	Q465	DTA114YS	SILICON	ROHM	
	Q479	2SD2144S(VW)	SILICON	ROHM	
	Q480	2SD2144S(VW)	SILICON	ROHM	
	Q481	2SA564A(Q,R)	SILICON	MATSUSHITA	
	Q482	2SA564A(Q,R)	SILICON	MATSUSHITA	
	Q483	2SC3377(Q,R)	SILICON	ROHM	
	Q484	2SC3377(Q,R)	SILICON	ROHM	
	Q485	DTC144ES	SILICON	ROHM	
	Q486	DTC144ES	SILICON	ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC331	UPC1330HA	I.C.	NEC	
	IC332	TC4066BP	I.C.	TOSHIBA	
	IC351	HA12136A	I.C.	HITACHI	
	IC361	TC4066BP	I.C.	TOSHIBA	
	IC371	BA15218N	I.C.	ROHM	
	IC401	BA15218N	I.C.	ROHM	
	IC451	UPC1228HA	I.C.	NEC	
	IC491	HD614081SC42	I.C.	HITACHI	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	D301	SLH-34MC3F	L.E.D.	ROHM	
	D302	SLH-34MC3F	L.E.D.	ROHM	
	D303	SLH-34MC3F	L.E.D.	ROHM	
	D304	SLH-34MC3F	L.E.D.	ROHM	
	D305	SLH-34VC3F	L.E.D.	ROHM	
	D306	SLH-34VC3F	L.E.D.	ROHM	
	D307	SLH-34VC3F	L.E.D.	ROHM	
	D331	1SS133	SILICON	ROHM	
	D332	1SS133	SILICON	ROHM	
	D333	1SS133	SILICON	ROHM	
	D369	MTZ8.2JC	ZENER	ROHM	
	D370	MTZ8.2JC	ZENER	ROHM	
	D438	1SS133	SILICON	ROHM	
	D439	1SS133	SILICON	ROHM	
	D440	1SS133	SILICON	ROHM	
	D451	1SS133	SILICON	ROHM	
	D460	1SS133	SILICON	ROHM	
	D461	1SS133	SILICON	ROHM	
	D479	1SS133	SILICON	ROHM	
	D480	1SS133	SILICON	ROHM	
	D484	1SS133	SILICON	ROHM	
	D491	1SS133	SILICON	ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C300	QETB1HM-475	4.7MF	50V	ELECTRO	
	C301	QCY21HK-122	1200PF	50V	CERAMIC	
	C302	QCY21HK-122	1200PF	50V	CERAMIC	
	C303	QETB1HM-105	1MF	50V	ELECTRO	
	C304	QFLB1HJ-223	0.022MF	50V	MYLAR	
	C322	QCGB1HK-102	1000PF	50V	CERAMIC	
	C325	QFLB1HJ-332	3300PF	50V	MYLAR	
	C326	QFLB1HJ-332	3300PF	50V	MYLAR	
	C327	QFLB1HJ-682	6800PF	50V	MYLAR	
	C328	QFLB1HJ-123	0.012MF	50V	MYLAR	
	C329	QFP81HG-562	5600PF	50V	POLY	
	C331	QETB1HM-105	1MF	50V	ELECTRO	
	C332	QETB1HM-105	1MF	50V	ELECTRO	
	C333	QETB1EM-106	10MF	25V	ELECTRO	
	C335	QCS21HJ-101	100PF	50V	CERAMIC	
	C336	QCS21HJ-101	100PF	50V	CERAMIC	
	C337	QCS21HJ-101	100PF	50V	CERAMIC	
	C338	QCS21HJ-101	100PF	50V	CERAMIC	
	C339	QCS21HJ-821	820PF	50V	CERAMIC	
	C340	QCS21HJ-821	820PF	50V	CERAMIC	
	C341	QCS21HJ-151	150PF	50V	CERAMIC	
	C342	QCS21HJ-151	150PF	50V	CERAMIC	
	C343	QCS21HJ-561	560PF	50V	CERAMIC	
	C344	QCS21HJ-561	560PF	50V	CERAMIC	
	C346	QFLB1HJ-223	0.022MF	50V	MYLAR	
	C347	QETB1CM-107	100MF	16V	ELECTRO	
	C351	QCF21HP-473	0.047MF	50V	CERAMIC	
	C352	QCF21HP-473	0.047MF	50V	CERAMIC	
	C353	QEK51HM-105G	1MF	50V	ELECTRO	
	C354	QEK51HM-105G	1MF	50V	ELECTRO	
	C355	QEK51HM-105G	1MF	50V	ELECTRO	
	C356	QEK51HM-105G	1MF	50V	ELECTRO	
	C357	QETB1EM-106	10MF	25V	ELECTRO	
	C358	QETB1EM-106	10MF	25V	ELECTRO	
	C359	QETB1EM-106	10MF	25V	ELECTRO	
	C361	QFV81HJ-224	0.22MF	50V	T.FILM	
	C362	QFV81HJ-224	0.22MF	50V	T.FILM	
	C363	QETB1HM-475	4.7MF	50V	ELECTRO	
	C364	QETB1CM-107	100MF	16V	ELECTRO	
	C365	QETB1HM-475	4.7MF	50V	ELECTRO	

⚠ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C366	QETB1CM-107	100MF	16V	ELECTRO	
	C367	QETB1AM-476	47MF	10V	ELECTRO	
	C371	QETB1HM-105	1MF	50V	ELECTRO	
	C372	QETB1HM-105	1MF	50V	ELECTRO	
	C373	QCS21HJ-220	22PF	50V	CERAMIC	
	C374	QCS21HJ-220	22PF	50V	CERAMIC	
	C375	QCBB1HK-101	100PF	50V	CERAMIC	C
	C375	QCBB1HK-101	100PF	50V	CERAMIC	D
	C376	QCBB1HK-101	100PF	50V	CERAMIC	C
	C376	QCBB1HK-101	100PF	50V	CERAMIC	D
	C391	QETB1EM-106	10MF	25V	ELECTRO	
	C392	QETB1EM-106	10MF	25V	ELECTRO	
	C393	QETB1CM-107	100MF	16V	ELECTRO	
	C394	QETB1CM-107	100MF	16V	ELECTRO	
	C395	QETB1AM-476	47MF	10V	ELECTRO	
	C397	QCGB1HK-102	1000PF	50V	CERAMIC	C
	C397	QCGB1HK-102	1000PF	50V	CERAMIC	D
	C398	QCGB1HK-102	1000PF	50V	CERAMIC	C
	C398	QCGB1HK-102	1000PF	50V	CERAMIC	D
	C401	QCF21HP-473	0.047MF	50V	CERAMIC	
	C402	QCF21HP-473	0.047MF	50V	CERAMIC	
	C405	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C406	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C407	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C408	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C411	QEK51CM-106G	10MF	16V	ELECTRO	
	C412	QEK51CM-106G	10MF	16V	ELECTRO	
	C413	QCS21HJ-271	270PF	50V	CERAMIC	
	C414	QCS21HJ-271	270PF	50V	CERAMIC	
	C415	QFLB1HJ-562	5600PF	50V	MYLAR	
	C416	QFLB1HJ-562	5600PF	50V	MYLAR	
	C417	QFLB1HJ-682	6800PF	50V	MYLAR	
	C418	QFLB1HJ-682	6800PF	50V	MYLAR	
	C419	QFLB1HJ-123	0.012MF	50V	MYLAR	
	C420	QFLB1HJ-123	0.012MF	50V	MYLAR	
	C421	QFLB1HJ-332	3300PF	50V	MYLAR	
	C422	QFLB1HJ-332	3300PF	50V	MYLAR	
	C423	QFLB1HJ-562	5600PF	50V	MYLAR	
	C424	QFLB1HJ-562	5600PF	50V	MYLAR	
	C425	QEK51CM-107	100MF	16V	ELECTRO	
	C431	QFV81HJ-224	0.22MF	50V	T.FILM	
	C432	QFV81HJ-224	0.22MF	50V	T.FILM	
	C433	QFV81HJ-224	0.22MF	50V	T.FILM	
	C434	QFV81HJ-224	0.22MF	50V	T.FILM	
	C441	QFLB1HJ-272	2700PF	50V	MYLAR	
	C442	QFLB1HJ-272	2700PF	50V	MYLAR	
	C443	QFLB1HJ-123	0.012MF	50V	MYLAR	
	C444	QFLB1HJ-123	0.012MF	50V	MYLAR	
	C445	QCS21HJ-470	47PF	50V	CERAMIC	
	C446	QCS21HJ-470	47PF	50V	CERAMIC	
	C450	QETB1AM-476	47MF	10V	ELECTRO	
	C451	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C452	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C453	QCS21HJ-101	100PF	50V	CERAMIC	
	C454	QCS21HJ-101	100PF	50V	CERAMIC	
	C455	QETB1AM-107	100MF	10V	ELECTRO	
	C456	QETB1AM-107	100MF	10V	ELECTRO	
	C457	QFLB1HJ-822	8200PF	50V	MYLAR	
	C458	QFLB1HJ-822	8200PF	50V	MYLAR	
	C459	QEK51HM-105G	1MF	50V	ELECTRO	
	C460	QEK51HM-105G	1MF	50V	ELECTRO	
	C461	QEK51CM-107	100MF	16V	ELECTRO	
	C463	QETB1HM-106	10MF	50V	ELECTRO	
	C464	QETB1HM-106	10MF	50V	ELECTRO	
	C481	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C484	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C489	QETBOJM-227	220MF	6.3V	ELECTRO	
	C491	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C493	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C499	QCVB1CM-103	0.01MF	16V	CERAMIC	

△ :SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R300	QRD167J-222	2.2K	1/6W	CARBON	
	R301	QRD167J-331	330	1/6W	CARBON	
	R302	QRD167J-331	330	1/6W	CARBON	
	R303	QRD167J-331	330	1/6W	CARBON	
	R304	QRD167J-331	330	1/6W	CARBON	
	R305	QRD167J-681	680	1/6W	CARBON	
	R306	QRD167J-681	680	1/6W	CARBON	
	R307	QRD167J-681	680	1/6W	CARBON	
	R309	QRD167J-473	47K	1/6W	CARBON	
	R310	QRD167J-473	47K	1/6W	CARBON	
	R311	QRD167J-103	10K	1/6W	CARBON	
	R312	QRD167J-103	10K	1/6W	CARBON	
	R313	QRD167J-153	15K	1/6W	CARBON	
	R314	QRD167J-153	15K	1/6W	CARBON	
	R317	QRD167J-223	22K	1/6W	CARBON	
	R318	QRD167J-223	22K	1/6W	CARBON	
	R319	QRD167J-563	56K	1/6W	CARBON	
	R320	QRD167J-563	56K	1/6W	CARBON	
△	R321	QRZ0077-220	22	1/4W	FUSIBLE	
	R322	QRD167J-753	75K	1/6W	CARBON	

△ :SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R323	QRD167J-105	1M	1/6W	CARBON	
	R324	QRD167J-103	10K	1/6W	CARBON	
	R325	QRD167J-753	75K	1/6W	CARBON	
	R326	QRD167J-475	4.7M	1/6W	CARBON	
	R327	QRD167J-393	39K	1/6W	CARBON	
	R328	QRD167J-393	39K	1/6W	CARBON	
	R329	QRD167J-472	4.7K	1/6W	CARBON	
	R331	QRD167J-332	3.3K	1/6W	CARBON	
	R332	QRD167J-332	3.3K	1/6W	CARBON	
	R333	QRD167J-104	100K	1/6W	CARBON	
	R334	QRD167J-391	390	1/6W	CARBON	
	R335	QRD167J-821	820	1/6W	CARBON	
△	R336	QRZ0077-100	10	1/4W	FUSIBLE	
	R337	QRD167J-471	470	1/6W	CARBON	
	R338	QRD167J-471	470	1/6W	CARBON	
	R339	QRD167J-223	22K	1/6W	CARBON	
	R340	QRD167J-223	22K	1/6W	CARBON	
	R341	QRD167J-100	10	1/6W	CARBON	
	R342	QRD167J-100	10	1/6W	CARBON	
	R343	QRD167J-222	2.2K	1/6W	CARBON	
△	R344	QRD14CJ-6R8S	6.8	1/4W	UNF.CARBON	
	R345	QRD167J-103	10K	1/6W	CARBON	
	R346	QRD167J-472	4.7K	1/6W	CARBON	
	R347	QRD167J-154	150K	1/6W	CARBON	
	R348	QRD167J-154	150K	1/6W	CARBON	
	R349	QRD167J-223	22K	1/6W	CARBON	
	R351	QRD167J-104	100K	1/6W	CARBON	
	R352	QRD167J-104	100K	1/6W	CARBON	
	R353	QRD167J-153	15K	1/6W	CARBON	
	R354	QRD167J-153	15K	1/6W	CARBON	
	R355	QRD167J-273	27K	1/6W	CARBON	
	R356	QRD167J-273	27K	1/6W	CARBON	
	R357	QRD167J-332	3.3K	1/6W	CARBON	
	R358	QRD167J-332	3.3K	1/6W	CARBON	
	R359	QRD167J-223	22K	1/6W	CARBON	
	R360	QRD167J-223	22K	1/6W	CARBON	
	R361	QRD167J-561	560	1/6W	CARBON	
	R362	QRD167J-561	560	1/6W	CARBON	
	R363	QRD167J-121	120	1/6W	CARBON	
	R365	QRD167J-103	10K	1/6W	CARBON	
	R366	QRD167J-105	1M	1/6W	CARBON	
	R367	QRD167J-472	4.7K	1/6W	CARBON	
	R368	QRD167J-472	4.7K	1/6W	CARBON	
	R369	QRD167J-102	1K	1/6W	CARBON	
	R370	QRD167J-102	1K	1/6W	CARBON	
	R371	QRD167J-562	5.6K	1/6W	CARBON	
	R372	QRD167J-562	5.6K	1/6W	CARBON	
	R373	QRD167J-103	10K	1/6W	CARBON	
	R374	QRD167J-103	10K	1/6W	CARBON	
	R375	QRD167J-473	47K	1/6W	CARBON	
	R376	QRD167J-473	47K	1/6W	CARBON	
	R377	QRD167J-103	10K	1/6W	CARBON	
	R378	QRD167J-103	10K	1/6W	CARBON	
	R379	QRD167J-332	3.3K	1/6W	CARBON	
	R380	QRD167J-332	3.3K	1/6W	CARBON	
	R381	QRD167J-102	1K	1/6W	CARBON	
	R382	QRD167J-102	1K	1/6W	CARBON	
	R383	QRD167J-104	100K	1/6W	CARBON	
	R384	QRD167J-104	100K	1/6W	CARBON	
	R385	QRD167J-822	8.2K	1/6W	CARBON	
	R386	QRD167J-822	8.2K	1/6W	CARBON	
	R387	QRD167J-104	100K	1/6W	CARBON	
	R388	QRD167J-104	100K	1/6W	CARBON	
	R389	QRD167J-221	220	1/6W	CARBON	
	R390	QRD167J-221	220	1/6W	CARBON	
	R391	QRD167J-272	2.7K	1/6W	CARBON	
	R392	QRD167J-272	2.7K	1/6W	CARBON	
	R393	QRD167J-562	5.6K	1/6W	CARBON	
	R394	QRD167J-562	5.6K	1/6W	CARBON	
	R395	QRD167J-103	10K	1/6W	CARBON	
	R396	QRD167J-103	10K	1/6W	CARBON	
	R397	QRD167J-102	1K	1/6W	CARBON	
	R398	QRD167J-223	22K	1/6W	CARBON	
	R399	QRD167J-223	22K	1/6W	CARBON	
	R401	QRD167J-333	33K	1/6W	CARBON	
	R402	QRD167J-333	33K	1/6W	CARBON	
	R403	QRD167J-472	4.7K	1/6W	CARBON	
	R404	QRD167J-472	4.7K	1/6W	CARBON	
	R405	QRD167J-683	68K	1/6W	CARBON	
	R406	QRD167J-683	68K	1/6W	CARBON	
	R407	QRD167J-153	15K	1/6W	CARBON	
	R408	QRD167J-153	15K	1/6W	CARBON	
	R409	QRD167J-153	15K	1/6W	CARBON	
	R410	QRD167J-153	15K	1/6W	CARBON	
	R411	QRD167J-392	3.9K	1/6W	CARBON	
	R412	QRD167J-392	3.9K	1/6W	CARBON	
	R413	QRD167J-182	1.8K	1/6W	CARBON	
	R414	QRD167J-182	1.8K	1/6W	CARBON	
	R415	QRD167J-511	510	1/6W	CARBON	
	R416	QRD167J-511	510	1/6W	CARBON	
	R417	QRD167J-301	300	1/6W	CARBON	
	R418	QRD167J-301	300	1/6W	CARBON	
	R419	QRD167J-223	22K	1/6W	CARBON	
	R420	QRD167J-223	22K	1/6W	CARBON	
	R421	QRD167J-242	2.4K	1/6W	CARBON	

△ :SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R422	QRD167J-242	2.4K	1/6W	CARBON	
	R423	QRD167J-122	1.2K	1/6W	CARBON	
	R424	QRD167J-122	1.2K	1/6W	CARBON	
	R425	QRD167J-153	15K	1/6W	CARBON	
	R426	QRD167J-153	15K	1/6W	CARBON	
	R427	QRD167J-101	100	1/6W	CARBON	
	R428	QRD167J-101	100	1/6W	CARBON	
	R429	QRD167J-222	2.2K	1/6W	CARBON	
	R430	QRD167J-222	2.2K	1/6W	CARBON	
	R431	QRD167J-474	470K	1/6W	CARBON	
	R432	QRD167J-474	470K	1/6W	CARBON	
	R433	QRD167J-271	270	1/6W	CARBON	
	R434	QRD167J-103	10K	1/6W	CARBON	
	R435	QRD167J-101	100	1/6W	CARBON	
	R436	QRD167J-183	18K	1/6W	CARBON	
	R437	QRD167J-102	1K	1/6W	CARBON	
	R438	QRD167J-222	2.2K	1/6W	CARBON	
	R439	QRD167J-103	10K	1/6W	CARBON	
	R440	QRD167J-223	22K	1/6W	CARBON	
	R441	QRD167J-101	100	1/6W	CARBON	
	R442	QRD167J-101	100	1/6W	CARBON	
	R443	QRD167J-183	18K	1/6W	CARBON	
	R445	QRD167J-224	220K	1/6W	CARBON	
	R446	QRD167J-103	10K	1/6W	CARBON	
	R447	QRD167J-103	10K	1/6W	CARBON	
	R448	QRD167J-223	22K	1/6W	CARBON	
	R450	QRD167J-271	270	1/6W	CARBON	
	R451	QRD167J-102	1K	1/6W	CARBON	
	R452	QRD167J-102	1K	1/6W	CARBON	
	R453	QRD167J-470	47	1/6W	CARBON	
	R454	QRD167J-470	47	1/6W	CARBON	
	R455	QRD167J-334	330K	1/6W	CARBON	
	R456	QRD167J-334	330K	1/6W	CARBON	
	R457	QRD167J-432	4.3K	1/6W	CARBON	
	R458	QRD167J-432	4.3K	1/6W	CARBON	
	R459	QRD167J-152	1.5K	1/6W	CARBON	
	R460	QRD167J-152	1.5K	1/6W	CARBON	
	R461	QRD167J-512	5.1K	1/6W	CARBON	
	R462	QRD167J-512	5.1K	1/6W	CARBON	
	R463	QRD167J-512	5.1K	1/6W	CARBON	
	R464	QRD167J-512	5.1K	1/6W	CARBON	
	R465	QRD167J-223	22K	1/6W	CARBON	
	R466	QRD167J-223	22K	1/6W	CARBON	
	R467	QRD167J-105	1M	1/6W	CARBON	
	R468	QRD167J-105	1M	1/6W	CARBON	
	R469	QRD167J-105	1M	1/6W	CARBON	
	R470	QRD167J-105	1M	1/6W	CARBON	
	R471	QRD167J-471	470	1/6W	CARBON	
	R472	QRD167J-472	4.7K	1/6W	CARBON	
	R473	QRD167J-472	4.7K	1/6W	CARBON	
	R474	QRD167J-274	270K	1/6W	CARBON	
	R475	QRD167J-104	100K	1/6W	CARBON	
	R476	QRD167J-103	10K	1/6W	CARBON	
	R477	QRD167J-103	10K	1/6W	CARBON	
	R479	QRD167J-222	2.2K	1/6W	CARBON	
	R480	QRD167J-222	2.2K	1/6W	CARBON	
	R481	QRD167J-394	390K	1/6W	CARBON	
	R482	QRD167J-394	390K	1/6W	CARBON	
	R483	QRD167J-224	220K	1/6W	CARBON	
	R484	QRD167J-224	220K	1/6W	CARBON	
	R485	QRD167J-472	4.7K	1/6W	CARBON	
	R486	QRD167J-472	4.7K	1/6W	CARBON	
	R487	QRD167J-103	10K	1/6W	CARBON	
	R488	QRD167J-103	10K	1/6W	CARBON	
	R489	QRD167J-102	1K	1/6W	CARBON	
	R490	QRD167J-102	1K	1/6W	CARBON	
	R491	QRD167J-105	1M	1/6W	CARBON	
	R492	QRD167J-153	15K	1/6W	CARBON	
	R494	QRD167J-101	100	1/6W	CARBON	
	R495	QRD167J-101	100	1/6W	CARBON	
	R496	QRD167J-101	100	1/6W	CARBON	
	R497	QRD167J-104	100K	1/6W	CARBON	
	R498	QRD167J-101	100	1/6W	CARBON	
	R499	QRD167J-220	22	1/6W	CARBON	
	RA491	QRB045J-562	5.6K	1/8W	R.NETWORK	
	RA492	QRB089J-104	100K	1/10W	R.NETWORK	
	VR311	QVPA601-503A	50K		VARIABLE	
	VR312	QVPA601-503A	50K		VARIABLE	
	VR331	QVPA601-154A	150K		VARIABLE	
	VR332	QVPA601-154A	150K		VARIABLE	
	VR431	QVPA601-501A	500		VARIABLE	
	VR432	QVPA601-501A	500		VARIABLE	
	VR433	QVPA601-501A	500		VARIABLE	
	VR434	QVPA601-501A	500		VARIABLE	
	VR451	QVPA601-201A	200		VARIABLE	
	VR452	QVPA601-201A	200		VARIABLE	
	VR453	QVPA601-201A	200		VARIABLE	
	VR454	QVPA601-201A	200		VARIABLE	
	VR481	QVPA601-103A	10K		VARIABLE	
	VR482	QVPA601-103A	10K		VARIABLE	
	VR483	QVPA601-103A	10K		VARIABLE	
	VR484	QVPA601-103A	10K		VARIABLE	

△ : SAFETY PARTS

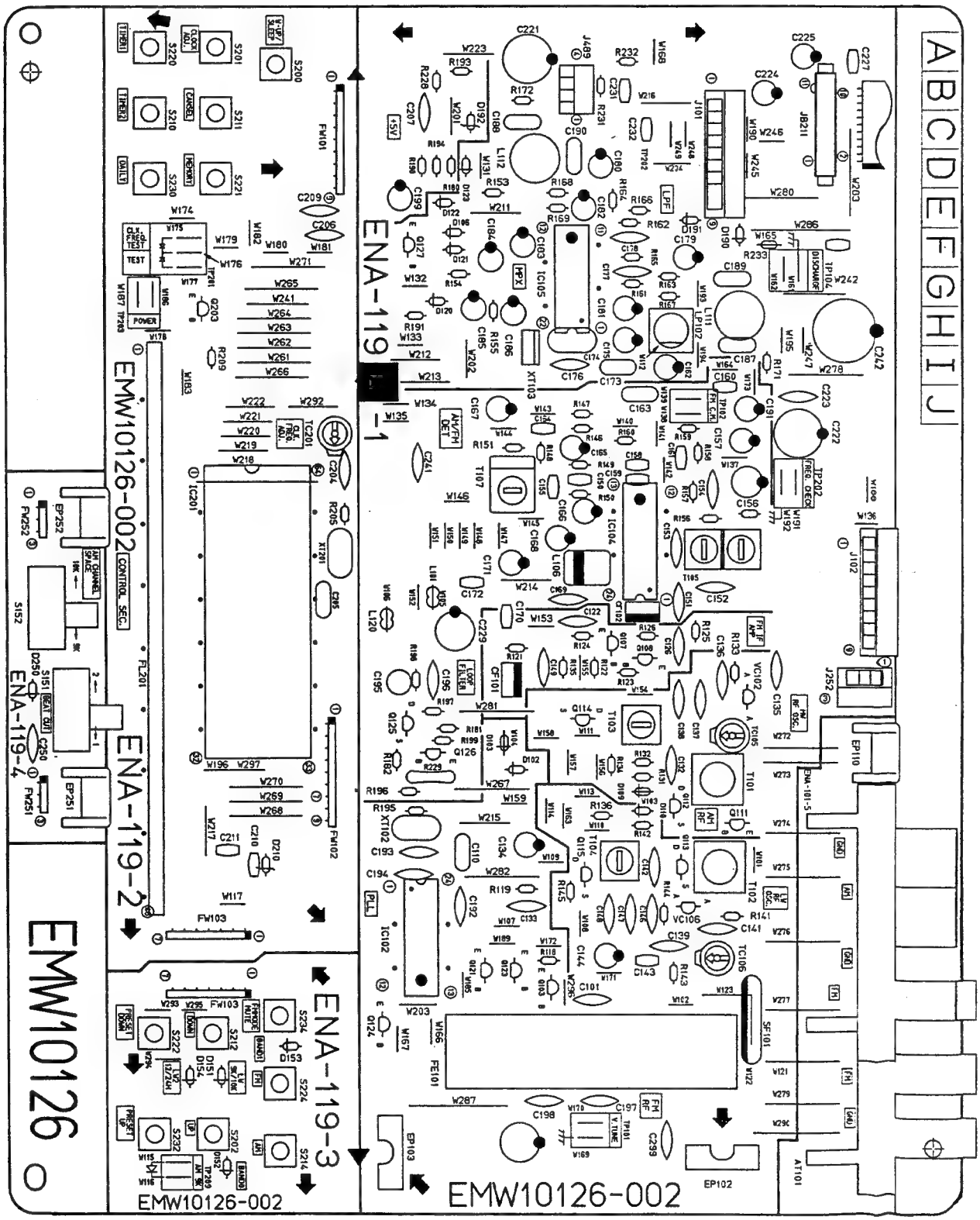
Others

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		EMW10097-003	PRINTED BOARD	
	J251	VMC0107-003	CONNECT TERMINAL(3PIN)	
	J311	EMV7130-015	CONNECTOR(15PIN)	
	J485	VMC0107-004	CONNECT TERMINAL(4PIN)	
	J486	VMC0107-004	CONNECT TERMINAL(4PIN)	
	J487	VMC0107-006	CONNECT TERMINAL(6PIN)	
	J488	VMC0107-003	CONNECT TERMINAL(3PIN)	
	J491	VMC0107-008	CONNECT TERMINAL(8PIN)	
	J492	VMC0107-008	CONNECT TERMINAL(8PIN)	
	K401	ENZ8101-007	INDUCTOR	C
	K401	ENZ8101-007	INDUCTOR	D
	K402	ENZ8101-007	INDUCTOR	C
	K402	ENZ8101-007	INDUCTOR	D
	K403	ENZ8101-007	INDUCTOR	C
	K403	ENZ8101-007	INDUCTOR	D
	K404	ENZ8101-007	INDUCTOR	C
	K404	ENZ8101-007	INDUCTOR	D
	K405	ENZ8101-007	INDUCTOR	C
	K405	ENZ8101-007	INDUCTOR	D
	L331	ENZ6002-012	OSCILLATOR COIL	
	L333	EQL2106-223	INDUCTOR	
	L334	EQL2106-223	INDUCTOR	
	L335	EQL2106-223	INDUCTOR	C
	L335	EQL2106-223	INDUCTOR	D
	L336	EQL2106-223	INDUCTOR	C
	L336	EQL2106-223	INDUCTOR	D
	L401	EQL2106-562	INDUCTOR	
	L402	EQL2106-562	INDUCTOR	
	P331	E04363-008	CONNECT TERMINAL(8PIN)	
	P333	E04363-004	PLUG ASSY(4PIN)	
	S300	ESP0001-018	TACT SWITCH(A REV PLAY)	
	S301	ESP0001-018	TACT SWITCH(A REW)	
	S302	ESP0001-018	TACT SWITCH(A F.FWD)	
	S303	ESP0001-018	TACT SWITCH(A FWD PLAY)	
	S310	ESP0001-018	TACT SWITCH(B REV PLAY)	
	S311	ESP0001-018	TACT SWITCH(B REW)	
	S312	ESP0001-018	TACT SWITCH(B F.FWD)	
	S313	ESP0001-018	TACT SWITCH(B FWD PLAY)	
	S320	ESP0001-018	TACT SWITCH(A STOP)	
	S321	ESP0001-018	TACT SWITCH(B STOP)	
	S322	ESP0001-018	TACT SWITCH(B REC)	
	S323	ESP0001-018	TACT SWITCH(B PAUSE)	
	S330	ESP0001-018	TACT SWITCH(M.SPEED DUB)	
	S331	ESP0001-018	TACT SWITCH(NR)	
	S332	ESP0001-018	TACT SWITCH(REV MODE)	
	S333	ESP0001-018	TACT SWITCH(CD DIRECT REC)	
	S461	ESB1100-003	LEAF SWITCH(REV REC)	
	S462	ESB1100-003	LEAF SWITCH(B-METAL)	
	S463	ESB1100-003	LEAF SWITCH(FWD REC)	
	S464	ESB1100-003	LEAF SWITCH(B-PACK)	
	S465	ESB1100-003	LEAF SWITCH(B CrO_2)	
	S466	ESB1100-003	LEAF SWITCH(A CrO_2)	
	S467	ESB1100-003	LEAF SWITCH(A-PACK)	
	EP301	E70859-001	EARTH PLATE	
	FS300	E3400-431	SPACER	
	FS301	E3400-431	SPACER	
	FW481	EWR37B-16LST	FLAT WIRE(7PIN)	
	FW482	EWR37B-13LST	FLAT WIRE(7PIN)	
	FW483	EWR33B-25LST	FLAT WIRE(3PIN)	
	FW484	EWR33B-16LST	FLAT WIRE(3PIN)	
	FW487	EWR36B-16LST	FLAT WIRE(6PIN)	
	FW488	EWR33B-20LST	FLAT WIRE(3PIN)	
	FW489	EWR34B-13LST	FLAT WIRE(4PIN)	
	FW491	EWR38B-25LST	FLAT WIRE(8PIN)	
	FW492	EWR38B-40LST	FLAT WIRE(8PIN)	
	JA311	EWP902-016	PLUG WIRE ASSY(15PIN)	
	SP301	E406238-002	SHIELD PLATE	C
	SP301	E406238-002	SHIELD PLATE	D
	XT491	ECX0004-194KM	RESONATOR	

△ : SAFETY PARTS

■ENA-119 ☐ Tuner PC Board Ass'y

Note : ENA-119 ☐ varies according to the areas employed. See note (1) when placing an order.



Note(1)

PC Board Ass'y	Designated Areas
ENA-119 [A]	the U.S.A. , Canada
ENA-119 [B]	Universal Type
ENA-119 [C]	Australia
ENA-119 [D]	Continental Europe , East Europe
ENA-119 [E]	Germany
ENA-119 [F]	the U.K.
ENA-119 [G]	Italy
ENA-119 [I]	Poland , Soviet Union and Rumania

Transistors

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q103	2SC461(B,C)	SILICON	HITACHI	
	Q107	2SC535(B,C)	SILICON	HITACHI	
	Q108	2SC461(B,C)	SILICON	HITACHI	
	Q111	2SD2144S(VW)	SILICON	ROHM	D
	Q111	2SD2144S(VW)	SILICON	ROHM	E
	Q111	2SD2144S(VW)	SILICON	ROHM	F
	Q111	2SD2144S(VW)	SILICON	ROHM	G
	Q111	2SD2144S(VW)	SILICON	ROHM	I
	Q112	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q113	2SK301(Q,R)	F.E.T	MATSUSHITA	D
	Q113	2SK301(Q,R)	F.E.T	MATSUSHITA	E
	Q113	2SK301(Q,R)	F.E.T	MATSUSHITA	F
	Q113	2SK301(Q,R)	F.E.T	MATSUSHITA	G
	Q113	2SK301(Q,R)	F.E.T	MATSUSHITA	I
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	D
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	E
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	F
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	G
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	I
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	D
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	E
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	F
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	G
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	I
	Q121	DTA114ES	SILICON	ROHM	D
	Q121	DTA114ES	SILICON	ROHM	E
	Q121	DTA114ES	SILICON	ROHM	F
	Q121	DTA114ES	SILICON	ROHM	G
	Q121	DTA114ES	SILICON	ROHM	I
	Q123	DTA114ES	SILICON	ROHM	
	Q124	DTA114ES	SILICON	ROHM	
	Q125	2SK301(Q2)	F.E.T	MATSUSHITA	
	Q126	2SC458(D)	SILICON	HITACHI	
	Q127	DTC144ES	SILICON	ROHM	
	Q203	DTA114YS	SILICON	ROHM	

△ : SAFETY PARTS

I.C.s

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC102	LC7218	I.C.	SANYO	
	IC104	LA1266A	I.C.	SANYO	
	IC105	LA3401	I.C.	SANYO	
	IC201	HD614089SC35	I.C.	HITACHI	

△ : SAFETY PARTS

Diodes

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	D102	1SS133	SILICON	ROHM	D
	D102	1SS133	SILICON	ROHM	E
	D102	1SS133	SILICON	ROHM	F
	D102	1SS133	SILICON	ROHM	G
	D102	1SS133	SILICON	ROHM	I
	D103	1SS133	SILICON	ROHM	D
	D103	1SS133	SILICON	ROHM	E
	D103	1SS133	SILICON	ROHM	F
	D103	1SS133	SILICON	ROHM	G
	D103	1SS133	SILICON	ROHM	I
	D106	1SS133	SILICON	ROHM	
	D109	1SS133	SILICON	ROHM	D
	D109	1SS133	SILICON	ROHM	E
	D109	1SS133	SILICON	ROHM	F
	D109	1SS133	SILICON	ROHM	G

△ : SAFETY PARTS

Diodes

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	D109	1SS133	SILICON	ROHM	I
	D110	1SS133	SILICON	ROHM	D
	D110	1SS133	SILICON	ROHM	E
	D110	1SS133	SILICON	ROHM	F
	D110	1SS133	SILICON	ROHM	G
	D110	1SS133	SILICON	ROHM	I
	D120	1SS133	SILICON	ROHM	
	D121	1SS133	SILICON	ROHM	
	D122	1SS133	SILICON	ROHM	
	D123	1SS133	SILICON	ROHM	
	D151	1SS133	SILICON	ROHM	C
	D152	1SS133	SILICON	ROHM	A
	D152	1SS133	SILICON	ROHM	I
	D153	1SS133	SILICON	ROHM	B
	D153	1SS133	SILICON	ROHM	I
	D154	1SS133	SILICON	ROHM	A
	D154	1SS133	SILICON	ROHM	G
	D190	1SS133	SILICON	ROHM	
	D191	1SS133	SILICON	ROHM	
	D192	MTZ5.1JC	ZENER	ROHM	
	D210	MTZ5.6JC	ZENER	ROHM	
	D250	1SS133	SILICON	ROHM	B
	VC102	SVC342(L)	VARICAP	SANYO	
	VC106	SVC342(L)	VARICAP	SANYO	D
	VC106	SVC342(L)	VARICAP	SANYO	E
	VC106	SVC342(L)	VARICAP	SANYO	F
	VC106	SVC342(L)	VARICAP	SANYO	G
	VC106	SVC342(L)	VARICAP	SANYO	I

△ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C101	QCF21HP-223	0.022MF	50V	CERAMIC	
	C110	QCZ0202-155	1.5MF	25V	CERAMIC	
	C122	QCF21HP-223	0.022MF	50V	CERAMIC	
	C126	QCF21HP-223	0.022MF	50V	CERAMIC	
	C132	QCS21HJ-561	560PF	50V	CERAMIC	
	C133	QCF21HP-223	0.022MF	50V	CERAMIC	
	C134	QETB1EM-106	10MF	25V	ELECTRO	
	C135	QCC21EM-223	0.022MF	25V	CERAMIC	
	C136	QCT26CH-180	18PF	50V	CERAMIC	
	C137	QCT26CH-221	220PF	50V	CERAMIC	
	C138	QCT26CH-241	240PF	50V	CERAMIC	
	C139	QCC21EM-223	0.022MF	25V	CERAMIC	D
	C139	QCC21EM-223	0.022MF	25V	CERAMIC	E
	C139	QCC21EM-223	0.022MF	25V	CERAMIC	F
	C139	QCC21EM-223	0.022MF	25V	CERAMIC	G
	C139	QCC21EM-223	0.022MF	25V	CERAMIC	I
	C141	QCS21HJ-270	27PF	50V	CERAMIC	D
	C141	QCS21HJ-270	27PF	50V	CERAMIC	E
	C141	QCS21HJ-270	27PF	50V	CERAMIC	F
	C141	QCS21HJ-270	27PF	50V	CERAMIC	G
	C141	QCS21HJ-270	27PF	50V	CERAMIC	I
	C142	QCY21HK-272	2700PF	50V	CERAMIC	D
	C142	QCY21HK-272	2700PF	50V	CERAMIC	E
	C142	QCY21HK-272	2700PF	50V	CERAMIC	F
	C142	QCY21HK-272	2700PF	50V	CERAMIC	G
	C142	QCY21HK-272	2700PF	50V	CERAMIC	I
	C143	QCHB1EZ-223	0.022MF	25V	CERAMIC	D
	C143	QCHB1EZ-223	0.022MF	25V	CERAMIC	E
	C143	QCHB1EZ-223	0.022MF	25V	CERAMIC	F
	C143	QCHB1EZ-223	0.022MF	25V	CERAMIC	G
	C143	QCHB1EZ-223	0.022MF	25V	CERAMIC	I
	C144	QETB1EM-106	10MF	25V	ELECTRO	D
	C144	QETB1EM-106	10MF	25V	ELECTRO	E
	C144	QETB1EM-106	10MF	25V	ELECTRO	F
	C144	QETB1EM-106	10MF	25V	ELECTRO	G
	C144	QETB1EM-106	10MF	25V	ELECTRO	I
	C146	QCT26CH-680	68PF	50V	CERAMIC	D
	C146	QCT26CH-680	68PF	50V	CERAMIC	E
	C146	QCT26CH-680	68PF	50V	CERAMIC	F
	C146	QCT26CH-680	68PF	50V	CERAMIC	G
	C146	QCT26CH-680	68PF	50V	CERAMIC	I
	C147	QCT26CH-220	22PF	50V	CERAMIC	D
	C147	QCT26CH-220	22PF	50V	CERAMIC	E
	C147	QCT26CH-220	22PF	50V	CERAMIC	F
	C147	QCT26CH-220	22PF	50V	CERAMIC	G
	C147	QCT26CH-220	22PF	50V	CERAMIC	I
	C148	QCT26CH-121	120PF	50V	CERAMIC	D
	C148	QCT26CH-121	120PF	50V	CERAMIC	E
	C148	QCT26CH-121	120PF	50V	CERAMIC	F
	C148	QCT26CH-121	120PF	50V	CERAMIC	G
	C148	QCT26CH-121	120PF	50V	CERAMIC	I
	C149	QCF21HP-223	0.022MF	50V	CERAMIC	
	C150	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C151	QCF21HP-223	0.022MF	50V	CERAMIC	
	C152	QCF21HP-223	0.022MF	50V	CERAMIC	

△ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C153	QCC21EM-223	0.022MF 25V CERAMIC	
	C154	QCF21HP-223	0.022MF 50V CERAMIC	
	C155	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C156	QETB1CM-227	220MF 16V ELECTRO	
	C157	QETB1HM-474	0.47MF 50V ELECTRO	
	C158	QCBB1HK-101	100PF 50V CERAMIC	
	C159	QCBB1HK-101	100PF 50V CERAMIC	
	C160	QCBB1HK-221	220PF 50V CERAMIC	A
	C160	QCBB1HK-221	220PF 50V CERAMIC	B
	C160	QCBB1HK-221	220PF 50V CERAMIC	C
	C160	QCBB1HK-101	100PF 50V CERAMIC	D
	C160	QCBB1HK-221	220PF 50V CERAMIC	E
	C160	QCBB1HK-101	100PF 50V CERAMIC	F
	C160	QCBB1HK-221	220PF 50V CERAMIC	G
	C160	QCBB1HK-101	100PF 50V CERAMIC	I
	C161	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C162	QETB1EM-106	10MF 25V ELECTRO	
	C163	QFLB1HJ-102	1000PF 50V MYLAR	
	C164	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C165	QETB1HM-474	0.47MF 50V ELECTRO	
	C166	QETB1HM-225	2.2MF 50V ELECTRO	
	C167	QETB1HM-225	2.2MF 50V ELECTRO	
	C168	QETB1HM-475	4.7MF 50V ELECTRO	
	C169	QCF21HP-223	0.022MF 50V CERAMIC	
	C170	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C171	QETB1EM-106	10MF 25V ELECTRO	
	C172	QCVB1CM-103	0.01MF 16V CERAMIC	
	C173	QFLB1HJ-393	0.039MF 50V MYLAR	A
	C173	QFLB1HJ-393	0.039MF 50V MYLAR	B
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	C
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	D
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	E
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	F
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	G
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	I
	C174	QFLB1HJ-473	0.047MF 50V MYLAR	
	C175	QETB1EM-106	10MF 25V ELECTRO	
	C176	QCY21HK-102	1000PF 50V CERAMIC	
	C177	QCS21HJ-821	820PF 50V CERAMIC	A
	C177	QCS21HJ-821	820PF 50V CERAMIC	B
	C177	QCS21HJ-471	470PF 50V CERAMIC	C
	C177	QCS21HJ-471	470PF 50V CERAMIC	D
	C177	QCS21HJ-471	470PF 50V CERAMIC	E
	C177	QCS21HJ-561	560PF 50V CERAMIC	F
	C177	QCS21HJ-471	470PF 50V CERAMIC	G
	C177	QCS21HJ-471	470PF 50V CERAMIC	I
	C178	QCS21HJ-821	820PF 50V CERAMIC	A
	C178	QCS21HJ-821	820PF 50V CERAMIC	B
	C178	QCS21HJ-471	470PF 50V CERAMIC	C
	C178	QCS21HJ-471	470PF 50V CERAMIC	D
	C178	QCS21HJ-471	470PF 50V CERAMIC	E
	C178	QCS21HJ-561	560PF 50V CERAMIC	F
	C178	QCS21HJ-471	470PF 50V CERAMIC	G
	C178	QCS21HJ-471	470PF 50V CERAMIC	I
	C179	QETB1HM-225	2.2MF 50V ELECTRO	
	C180	QETB1HM-225	2.2MF 50V ELECTRO	
	C181	QETB1EM-106	10MF 25V ELECTRO	
	C182	QETB1HM-225	2.2MF 50V ELECTRO	
	C183	QETB1HM-105	1MF 50V ELECTRO	
	C184	QETB1HM-105	1MF 50V ELECTRO	
	C185	QETB1HM-225	2.2MF 50V ELECTRO	
	C186	QETB1HM-474	0.47MF 50V ELECTRO	
	C187	QFLB1HJ-332	3300PF 50V MYLAR	A
	C187	QFLB1HJ-332	3300PF 50V MYLAR	B
	C187	QFLB1HJ-102	1000PF 50V MYLAR	C
	C187	QFLB1HJ-102	1000PF 50V MYLAR	D
	C187	QFLB1HJ-102	1000PF 50V MYLAR	E
	C187	QFLB1HJ-332	3300PF 50V MYLAR	F
	C187	QFLB1HJ-102	1000PF 50V MYLAR	G
	C187	QFLB1HJ-102	1000PF 50V MYLAR	I
	C188	QFLB1HJ-332	3300PF 50V MYLAR	A
	C188	QFLB1HJ-332	3300PF 50V MYLAR	B
	C188	QFLB1HJ-102	1000PF 50V MYLAR	C
	C188	QFLB1HJ-102	1000PF 50V MYLAR	D
	C188	QFLB1HJ-102	1000PF 50V MYLAR	E
	C188	QFLB1HJ-332	3300PF 50V MYLAR	F
	C188	QFLB1HJ-102	1000PF 50V MYLAR	G
	C188	QFLB1HJ-102	1000PF 50V MYLAR	I
	C189	QFLC1HJ-182Z	1800PF 50V MYLAR	
	C190	QFLC1HJ-182Z	1800PF 50V MYLAR	
	C191	QETB1HM-475	4.7MF 50V ELECTRO	
	C192	QCC21EM-473	0.047MF 25V CERAMIC	
	C193	QCS21HJ-180	18PF 50V CERAMIC	
	C194	QCS21HJ-180	18PF 50V CERAMIC	
	C195	QEN51HM-474	0.47MF 50V NON POLE	
	C196	QCY21HK-102	1000PF 50V CERAMIC	
	C197	QCF21HP-223	0.022MF 50V CERAMIC	
	C198	QCF21HP-103	0.01MF 50V CERAMIC	
	C199	QETB1HM-475	4.7MF 50V ELECTRO	
	C204	QCT26CH-120	12PF 50V CERAMIC	
	C205	QCZ0202-155	1.5MF 25V CERAMIC	
	C206	QCF21HP-103	0.01MF 50V CERAMIC	
	C207	QCF21HP-223	0.022MF 50V CERAMIC	
	C209	QCF21HP-103	0.01MF 50V CERAMIC	
	C210	QCVB1CM-103	0.01MF 16V CERAMIC	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C211	QCVB1CM-103	0.01MF 16V CERAMIC	
	C221	QETB0JM-477	470MF 6.3V ELECTRO	
	C222	QETB1CM-477	470MF 16V ELECTRO	
	C223	QCF21HP-103	0.01MF 50V CERAMIC	
	C224	QETB1HM-226	22MF 50V ELECTRO	
	C225	QETB1HM-226	22MF 50V ELECTRO	
	C227	QCVB1CM-103	0.01MF 16V CERAMIC	
	C229	QETB1CM-477	470MF 16V ELECTRO	
	C231	QCVB1CM-103	0.01MF 16V CERAMIC	
	C232	QCVB1CM-103	0.01MF 16V CERAMIC	
	C241	QCF21HP-223	0.022MF 50V CERAMIC	
	C242	QEA40HZ-10AB	ELECTRO	
	C250	QCY21HK-471	470PF 50V CERAMIC	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R118	QRD167J-332	3.3K 1/6W CARBON	
	R119	QRD167J-221	220 1/6W CARBON	
	R121	QRD167J-391	390 1/6W CARBON	
	R122	QRD167J-272	2.7K 1/6W CARBON	
	R123	QRD167J-102	1K 1/6W CARBON	
	R124	QRD167J-681	680 1/6W CARBON	
	R125	QRD167J-332	3.3K 1/6W CARBON	
	R126	QRD167J-221	220 1/6W CARBON	
	R131	QRD167J-331	330 1/6W CARBON	
	R132	QRD167J-103	10K 1/6W CARBON	
	R133	QRD167J-473	47K 1/6W CARBON	
	R134	QRD167J-103	10K 1/6W CARBON	D
	R134	QRD167J-103	10K 1/6W CARBON	E
	R134	QRD167J-103	10K 1/6W CARBON	F
	R134	QRD167J-103	10K 1/6W CARBON	G
	R134	QRD167J-103	10K 1/6W CARBON	I
	R135	QRD167J-470	47 1/6W CARBON	
	R136	QRD167J-103	10K 1/6W CARBON	
	R141	QRD167J-472	4.7K 1/6W CARBON	D
	R141	QRD167J-472	4.7K 1/6W CARBON	E
	R141	QRD167J-472	4.7K 1/6W CARBON	F
	R141	QRD167J-472	4.7K 1/6W CARBON	G
	R141	QRD167J-472	4.7K 1/6W CARBON	I
	R142	QRD167J-331	330 1/6W CARBON	D
	R142	QRD167J-331	330 1/6W CARBON	E
	R142	QRD167J-331	330 1/6W CARBON	F
	R142	QRD167J-331	330 1/6W CARBON	G
	R142	QRD167J-331	330 1/6W CARBON	I
	R143	QRD167J-103	10K 1/6W CARBON	D
	R143	QRD167J-103	10K 1/6W CARBON	E
	R143	QRD167J-103	10K 1/6W CARBON	F
	R143	QRD167J-103	10K 1/6W CARBON	G
	R143	QRD167J-103	10K 1/6W CARBON	I
	R144	QRD167J-473	47K 1/6W CARBON	D
	R144	QRD167J-473	47K 1/6W CARBON	E
	R144	QRD167J-473	47K 1/6W CARBON	F
	R144	QRD167J-473	47K 1/6W CARBON	G
	R144	QRD167J-473	47K 1/6W CARBON	I
	R145	QRD167J-103	10K 1/6W CARBON	D
	R145	QRD167J-103	10K 1/6W CARBON	E
	R145	QRD167J-103	10K 1/6W CARBON	F
	R145	QRD167J-103	10K 1/6W CARBON	G
	R145	QRD167J-103	10K 1/6W CARBON	I
	R146	QRD167J-560	56 1/6W CARBON	
	R147	QRD167J-103	10K 1/6W CARBON	
	R148	QRD167J-103	10K 1/6W CARBON	
	R149	QRD167J-223	22K 1/6W CARBON	
	R150	QRD167J-103	10K 1/6W CARBON	
	R151	QRD167J-222	2.2K 1/6W CARBON	
	R153	QRD167J-103	10K 1/6W CARBON	
	R154	QRD167J-103	10K 1/6W CARBON	
	R155	QRD167J-562	5.6K 1/6W CARBON	
	R156	QRD167J-822	8.2K 1/6W CARBON	
	R157	QRD167J-103	10K 1/6W CARBON	
	R158	QRD167J-183	18K 1/6W CARBON	A
	R158	QRD167J-273	27K 1/6W CARBON	B
	R158	QRD167J-273	27K 1/6W CARBON	C
	R158	QRD167J-273	27K 1/6W CARBON	D
	R158	QRD167J-273	27K 1/6W CARBON	E
	R158	QRD167J-273	27K 1/6W CARBON	F
	R158	QRD167J-273	27K 1/6W CARBON	G
	R158	QRD167J-273	27K 1/6W CARBON	I
	R159	QRD167J-561	560 1/6W CARBON	
	R160	QRD167J-562	5.6K 1/6W CARBON	A
	R160	QRD167J-562	5.6K 1/6W CARBON	B
	R160	QRD167J-183	18K 1/6W CARBON	C
	R160	QRD167J-183	18K 1/6W CARBON	D
	R160	QRD167J-183	18K 1/6W CARBON	E
	R160	QRD167J-822	8.2K 1/6W CARBON	F
	R160	QRD167J-183	18K 1/6W CARBON	G
	R160	QRD167J-183	18K 1/6W CARBON	I
	R161	QRD167J-823	82K 1/6W CARBON	A
	R161	QRD167J-823	82K 1/6W CARBON	B
	R161	QRD167J-124	120K 1/6W CARBON	C
	R161	QRD167J-124	120K 1/6W CARBON	D

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R161	QRD167J-124	120K 1/6W CARBON	E
	R161	QRD167J-823	82K 1/6W CARBON	F
	R161	QRD167J-124	120K 1/6W CARBON	G
	R161	QRD167J-124	120K 1/6W CARBON	I
	R162	QRD167J-823	82K 1/6W CARBON	A
	R162	QRD167J-823	82K 1/6W CARBON	B
	R162	QRD167J-124	120K 1/6W CARBON	C
	R162	QRD167J-124	120K 1/6W CARBON	D
	R162	QRD167J-124	120K 1/6W CARBON	E
	R162	QRD167J-823	82K 1/6W CARBON	F
	R162	QRD167J-124	120K 1/6W CARBON	G
	R162	QRD167J-124	120K 1/6W CARBON	I
	R163	QRD167J-472	4.7K 1/6W CARBON	A
	R163	QRD167J-472	4.7K 1/6W CARBON	B
	R163	QRD167J-392	3.9K 1/6W CARBON	C
	R163	QRD167J-392	3.9K 1/6W CARBON	D
	R163	QRD167J-392	3.9K 1/6W CARBON	E
	R163	QRD167J-392	3.9K 1/6W CARBON	F
	R163	QRD167J-392	3.9K 1/6W CARBON	G
	R163	QRD167J-392	3.9K 1/6W CARBON	I
	R164	QRD167J-472	4.7K 1/6W CARBON	A
	R164	QRD167J-472	4.7K 1/6W CARBON	B
	R164	QRD167J-392	3.9K 1/6W CARBON	C
	R164	QRD167J-392	3.9K 1/6W CARBON	D
	R164	QRD167J-392	3.9K 1/6W CARBON	E
	R164	QRD167J-392	3.9K 1/6W CARBON	F
	R164	QRD167J-392	3.9K 1/6W CARBON	G
	R164	QRD167J-392	3.9K 1/6W CARBON	I
	R165	QRD167J-184	180K 1/6W CARBON	A
	R165	QRD167J-184	180K 1/6W CARBON	B
	R165	QRD167J-274	270K 1/6W CARBON	C
	R165	QRD167J-274	270K 1/6W CARBON	D
	R165	QRD167J-274	270K 1/6W CARBON	E
	R165	QRD167J-274	270K 1/6W CARBON	F
	R165	QRD167J-274	270K 1/6W CARBON	G
	R165	QRD167J-274	270K 1/6W CARBON	I
	R166	QRD167J-184	180K 1/6W CARBON	A
	R166	QRD167J-184	180K 1/6W CARBON	B
	R166	QRD167J-274	270K 1/6W CARBON	C
	R166	QRD167J-274	270K 1/6W CARBON	D
	R166	QRD167J-274	270K 1/6W CARBON	E
	R166	QRD167J-274	270K 1/6W CARBON	F
	R166	QRD167J-274	270K 1/6W CARBON	G
	R166	QRD167J-274	270K 1/6W CARBON	I
	R167	QRD167J-393	39K 1/6W CARBON	A
	R167	QRD167J-393	39K 1/6W CARBON	B
	R167	QRD167J-473	47K 1/6W CARBON	C
	R167	QRD167J-473	47K 1/6W CARBON	D
	R167	QRD167J-473	47K 1/6W CARBON	E
	R167	QRD167J-473	47K 1/6W CARBON	F
	R167	QRD167J-473	47K 1/6W CARBON	G
	R167	QRD167J-473	47K 1/6W CARBON	I
	R168	QRD167J-103	10K 1/6W CARBON	
	R169	QRD167J-103	10K 1/6W CARBON	
	R171	QRD167J-682	6.8K 1/6W CARBON	
	R172	QRD167J-682	6.8K 1/6W CARBON	
	R180	QRD167J-103	10K 1/6W CARBON	
	R181	QRD167J-222	2.2K 1/6W CARBON	
	R182	QRD167J-181	180 1/6W CARBON	
	R190	QRD167J-103	10K 1/6W CARBON	
	R191	QRD167J-562	5.6K 1/6W CARBON	
	R193	QRD167J-103	10K 1/6W CARBON	
	R194	QRD167J-103	10K 1/6W CARBON	
	R195	QRD167J-473	47K 1/6W CARBON	
	R196	QRD167J-103	10K 1/6W CARBON	A
	R196	QRD167J-103	10K 1/6W CARBON	B
	R196	QRD167J-103	10K 1/6W CARBON	C
	R196	QRD167J-222	2.2K 1/6W CARBON	D
	R196	QRD167J-222	2.2K 1/6W CARBON	E
	R196	QRD167J-222	2.2K 1/6W CARBON	F
	R196	QRD167J-222	2.2K 1/6W CARBON	G
	R196	QRD167J-222	2.2K 1/6W CARBON	I
	R197	QRD167J-222	2.2K 1/6W CARBON	
	R198	QRD167J-332	3.3K 1/6W CARBON	A
	R198	QRD167J-332	3.3K 1/6W CARBON	B
	R198	QRD167J-332	3.3K 1/6W CARBON	C
	R198	QRD167J-822	8.2K 1/6W CARBON	D
	R198	QRD167J-822	8.2K 1/6W CARBON	E
	R198	QRD167J-822	8.2K 1/6W CARBON	F
	R198	QRD167J-822	8.2K 1/6W CARBON	G
	R198	QRD167J-822	8.2K 1/6W CARBON	I
	R199	QRD167J-472	4.7K 1/6W CARBON	
	R205	QRD167J-473	47K 1/6W CARBON	
	R209	QRD167J-104	100K 1/6W CARBON	
	R228	QRD167J-222	2.2K 1/6W CARBON	
⚠	R229	QRD14CJ-220S	22 1/4W UNF.CARBON	
	R231	QRD167J-103	10K 1/6W CARBON	
	R232	QRD167J-153	15K 1/6W CARBON	
	R233	QRD167J-470	47 1/6W CARBON	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		EMW10126-002	PRINTED BOARD	
	J101	VMC0107-009	CONNECT TERMINAL(9PIN)	
	J102	VMC0107-009	CONNECT TERMINAL(9PIN)	
	J252	VMC0107-003	CONNECT TERMINAL(3PIN)	B
	J489	EMV7122-004	CONNECTOR(4PIN)	
	L101	EQL4004-1R0	INDUCTOR	
	L106	EQL3001-102K	INDUCTOR	
	L111	EQL2103-393	INDUCTOR	
	L112	EQL2103-393	INDUCTOR	
	L120	EQL4004-1R0	INDUCTOR	
	S151	QSS6A12-E01	SLIDE SWITCH(AM BEAT CUT)	
	S152	QSS6A12-E01	SLIDE SWITCH(AMCHANNELSPACE)	B
	S200	ESP0001-018	TACT SWITCH(WAKE UP/SLEEP)	
	S201	ESP0001-018	TACT SWITCH(CLOCK ADJ)	
	S202	ESP0001-018	TACT SWITCH(UP)	
	S210	ESP0001-018	TACT SWITCH(TIMER 2)	
	S211	ESP0001-018	TACT SWITCH(CANCEL)	
	S212	ESP0001-018	TACT SWITCH(DOWN)	
	S214	ESP0001-018	TACT SWITCH(AM)	
	S220	ESP0001-018	TACT SWITCH(TIMER 1)	
	S221	ESP0001-018	TACT SWITCH(MEMORY)	
	S222	ESP0001-018	TACT SWITCH(PRESET DOWN)	
	S224	ESP0001-018	TACT SWITCH(FM)	
	S230	ESP0001-018	TACT SWITCH(DAILY)	
	S232	ESP0001-018	TACT SWITCH(PRESET UP)	
	S234	ESP0001-018	TACT SWITCH(FM MODE/MUTE)	
	T101	EQR1111-014	AM RF COIL	
	T102	EQR1111-005	AM RF COIL	D
	T102	EQR1111-005	AM RF COIL	E
	T102	EQR1111-005	AM RF COIL	F
	T102	EQR1111-005	AM RF COIL	G
	T102	EQR1111-005	AM RF COIL	I
	T103	EQR1207-017	MW OSC COIL	
	T104	EQR1307-010	LW OSC COIL	D
	T104	EQR1307-010	LW OSC COIL	E
	T104	EQR1307-010	LW OSC COIL	F
	T104	EQR1307-010	LW OSC COIL	G
	T104	EQR1307-010	LW OSC COIL	I
	T105	EQT2140-017	I.F. TRANSFORMER	
	T107	ECB1560-008	CERAMIC FILTER	
	AT101	EMB41YV-401K	ANTENNA TERMINAL	A
	AT101	EMB41YV-401K	ANTENNA TERMINAL	B
	AT101	EMB41YV-401K	ANTENNA TERMINAL	C
	AT101	EMB41YV-301K	ANTENNA TERMINAL	D
	AT101	EMB41YV-301K	ANTENNA TERMINAL	E
	AT101	EMB41YV-301K	ANTENNA TERMINAL	F
	AT101	EMB41YV-301K	ANTENNA TERMINAL	G
	AT101	EMB41YV-301K	ANTENNA TERMINAL	I
	CF101	ECB2123-006R	CERAMIC FILTER	A
	CF101	ECB2123-006R	CERAMIC FILTER	B
	CF101	ECB2123-006R	CERAMIC FILTER	C
	CF101	ECB2118-007R	CERAMIC FILTER	D
	CF101	ECB2118-007R	CERAMIC FILTER	E
	CF101	ECB2118-007R	CERAMIC FILTER	F
	CF101	ECB2118-007R	CERAMIC FILTER	G
	CF101	ECB2118-007R	CERAMIC FILTER	I
	CF102	ECB2123-006R	CERAMIC FILTER	A
	CF102	ECB2123-006R	CERAMIC FILTER	B
	CF102	ECB2123-006R	CERAMIC FILTER	C
	CF102	ECB2118-007R	CERAMIC FILTER	D
	CF102	ECB2118-007R	CERAMIC FILTER	E
	CF102	ECB2118-007R	CERAMIC FILTER	F
	CF102	ECB2118-007R	CERAMIC FILTER	G
	CF102	ECB2118-007R	CERAMIC FILTER	I
	EP102	E70859-001	EARTH PLATE	
	EP103	E70859-001	EARTH PLATE	
	EP110	E70225-001	EARTH PLATE	
	EP251	E70225-001	EARTH PLATE	
	EP252	E70225-001	EARTH PLATE	
	FE101	EAF2203-001	FRONT END	A
	FE101	EAF2203-001	FRONT END	B
	FE101	EAF2203-001	FRONT END	C
	FE101	EAF2203-003	FRONT END	D
	FE101	EAF2203-003	FRONT END	E
	FE101	EAF2203-003	FRONT END	F
	FE101	EAF2203-003	FRONT END	G
	FE101	EAF2301-001	FRONT END	I
	FL201	ELU0001-101	FL TUBE	
	FS201	E3400-449	SPACER	
	FW001	EWP902-015	FLAT WIRE ASSY	
	FW101	EWR39B-25LST	FLAT WIRE(9PIN)	
	FW102	EWR39B-25LST	FLAT WIRE(9PIN)	
	FW103	EWR37B-08SST	FLAT WIRE(7PIN)	
	FW251	EWR33B-08LST	FLAT WIRE(3PIN)	
	FW252	EWR33B-35LST	FLAT WIRE(3PIN)	B
	JB211	EMV7130-011	CONNECTOR(11PIN)	
	LP102	EQF0102-001	LOW PASS FILTER	D
	LP102	EQF0102-001	LOW PASS FILTER	E
	LP102	EQF0102-001	LOW PASS FILTER	F
	LP102	EQF0102-001	LOW PASS FILTER	G
	LP102	EQF0102-001	LOW PASS FILTER	I
	TC105	ENZ1003-006	TRIMMER	
	TC106	ENZ1003-006	TRIMMER	D
	TC106	ENZ1003-006	TRIMMER	E
	TC106	ENZ1003-006	TRIMMER	F

⚠ : SAFETY PARTS

Others

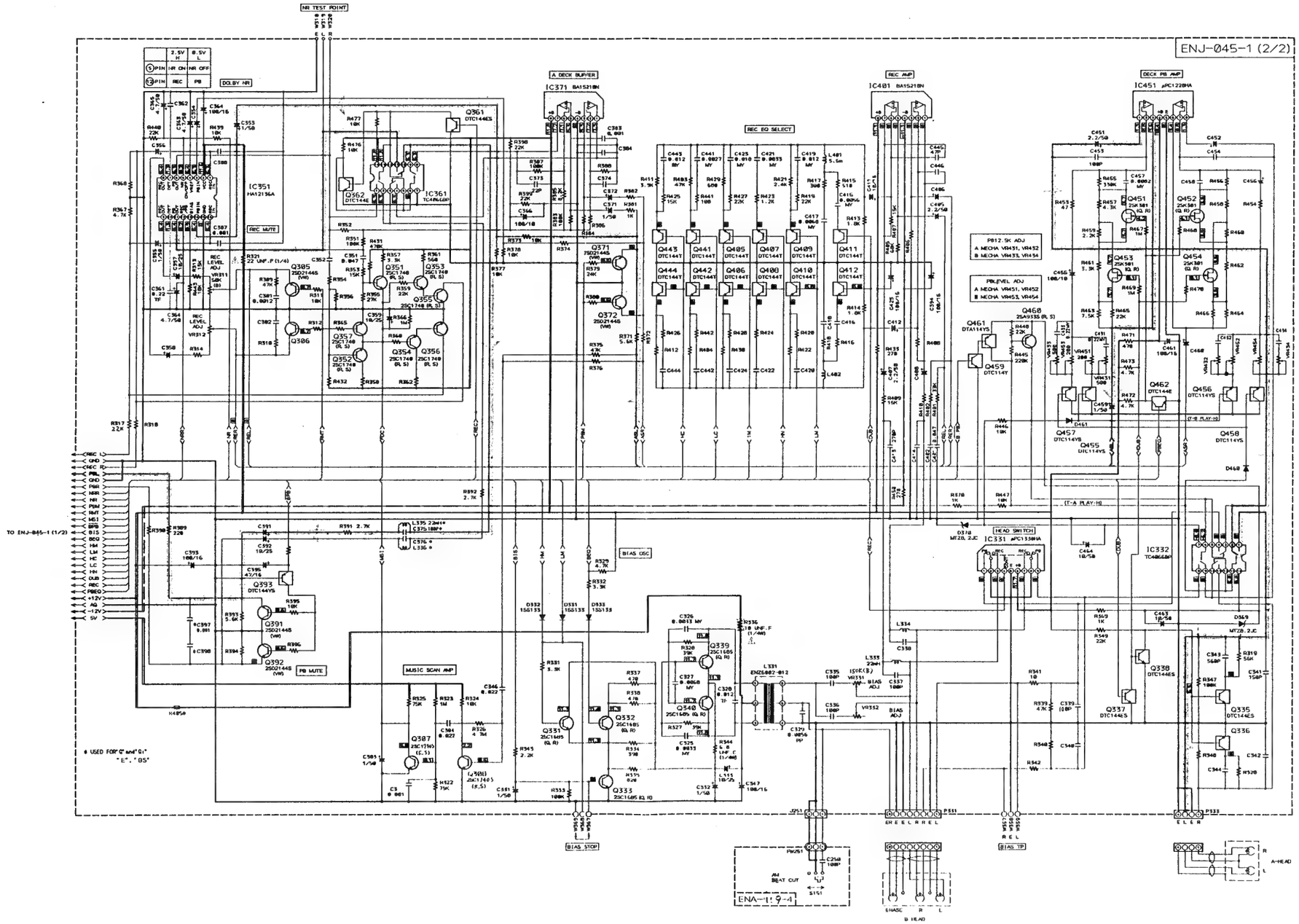
⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	TC106	ENZ1003-006	TRIMMER	G
	TC106	ENZ1003-006	TRIMMER	I
	TC201	ENZ1003-015	TRIMMER	
	XT102	ECX0007-200KC	RESONATOR	
	XT103	ECX0000-456KR	RESONATOR	
	XT201	ECX4194-304CF	RESONATOR	

⚠ : SAFETY PARTS

—MEMO—

SCHEMATIC DIAGRAM

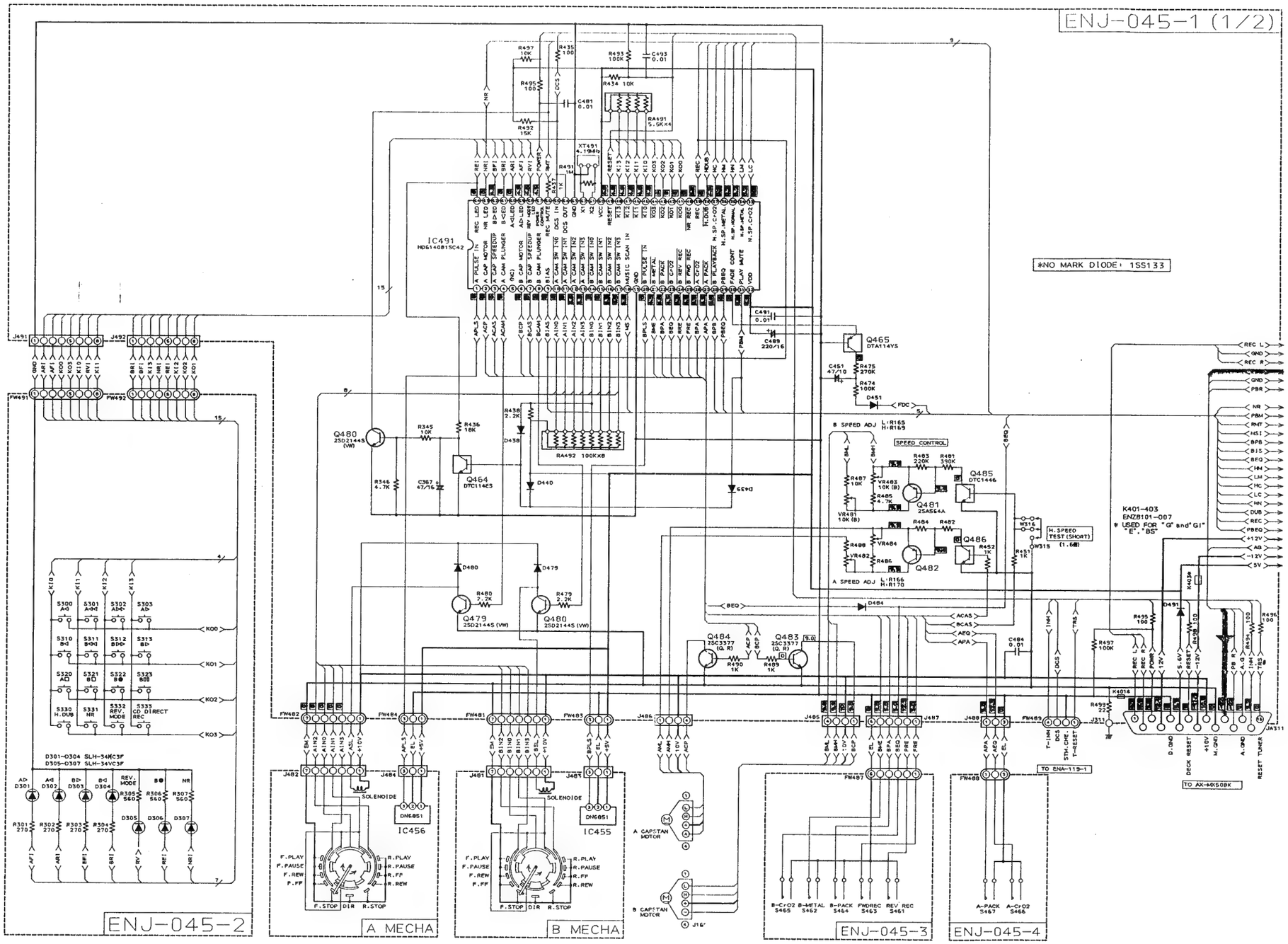
■ Cassette Amp Section



Notes:

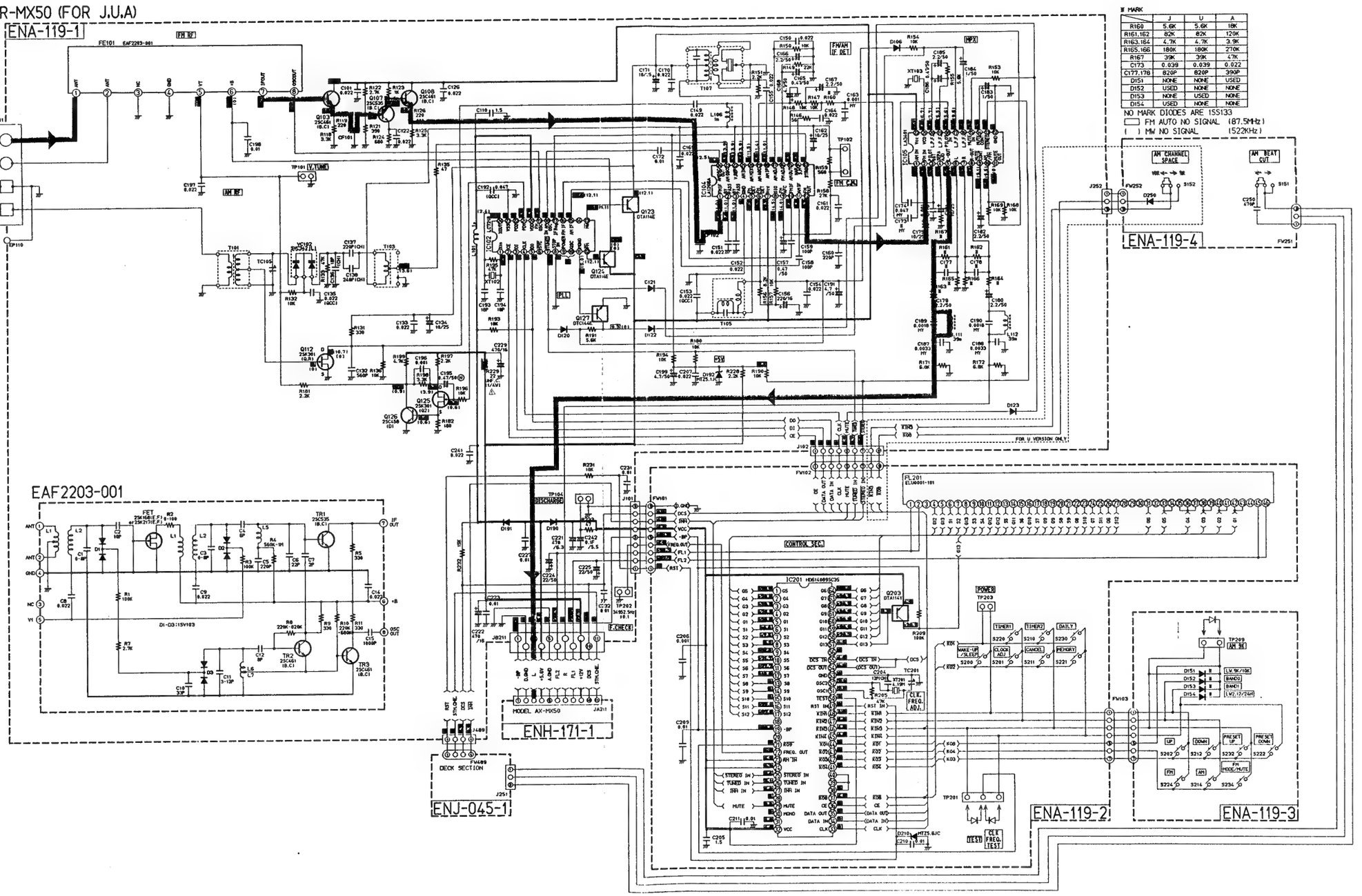
1. ▭ Shows DC voltage to the chassis with no signal input.
2. —— indicates +B power supply.
3. ------ indicates −B power supply.
4. ▭ indicates signal path.
5. When replacing the parts in the darkened are (▭) and those marked with ⚠, be sure to use the designated parts to ensure safety.
6. This is the standard circuit diagram.
   The design and contents are subject to change without notice.

■ Deck Control Section



(No.20240)

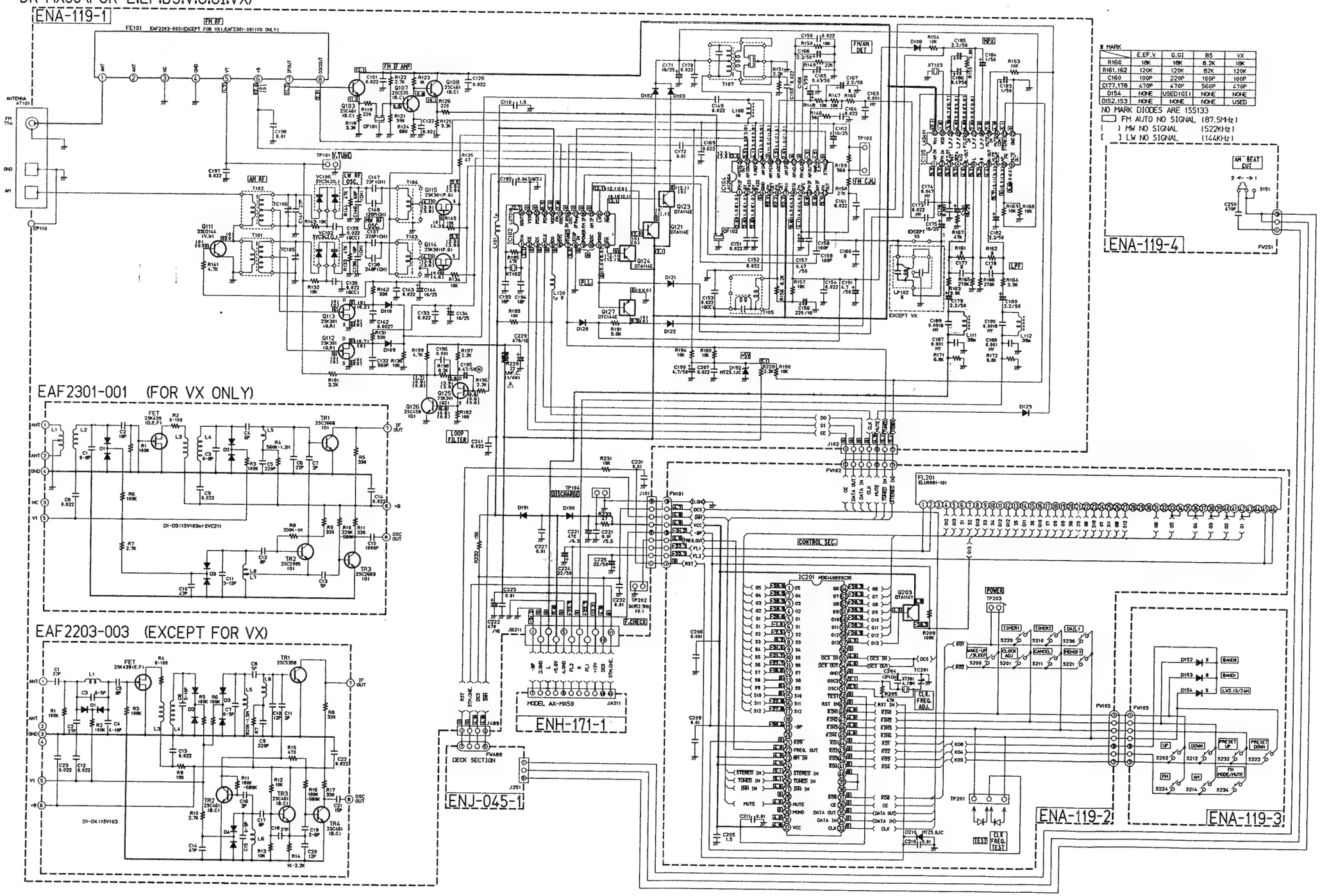
■ Tuner Section



※ MARK	J	U	A
R160	5.6K	5.6K	18K
R161,162	82K	82K	120K
R163,164	4.7K	4.7K	3.9K
R165,166	180K	180K	270K
R167	39K	39K	47K
C173	0.039	0.039	0.022
C177,178	820P	820P	390P
D151	NONE	NONE	USED
D152	USED	NONE	NONE
D153	NONE	USED	NONE
D154	USED	NONE	NONE

■ Tuner Section

DR-MX50 (FOR E,EF,BS,V,G,GI,VX)

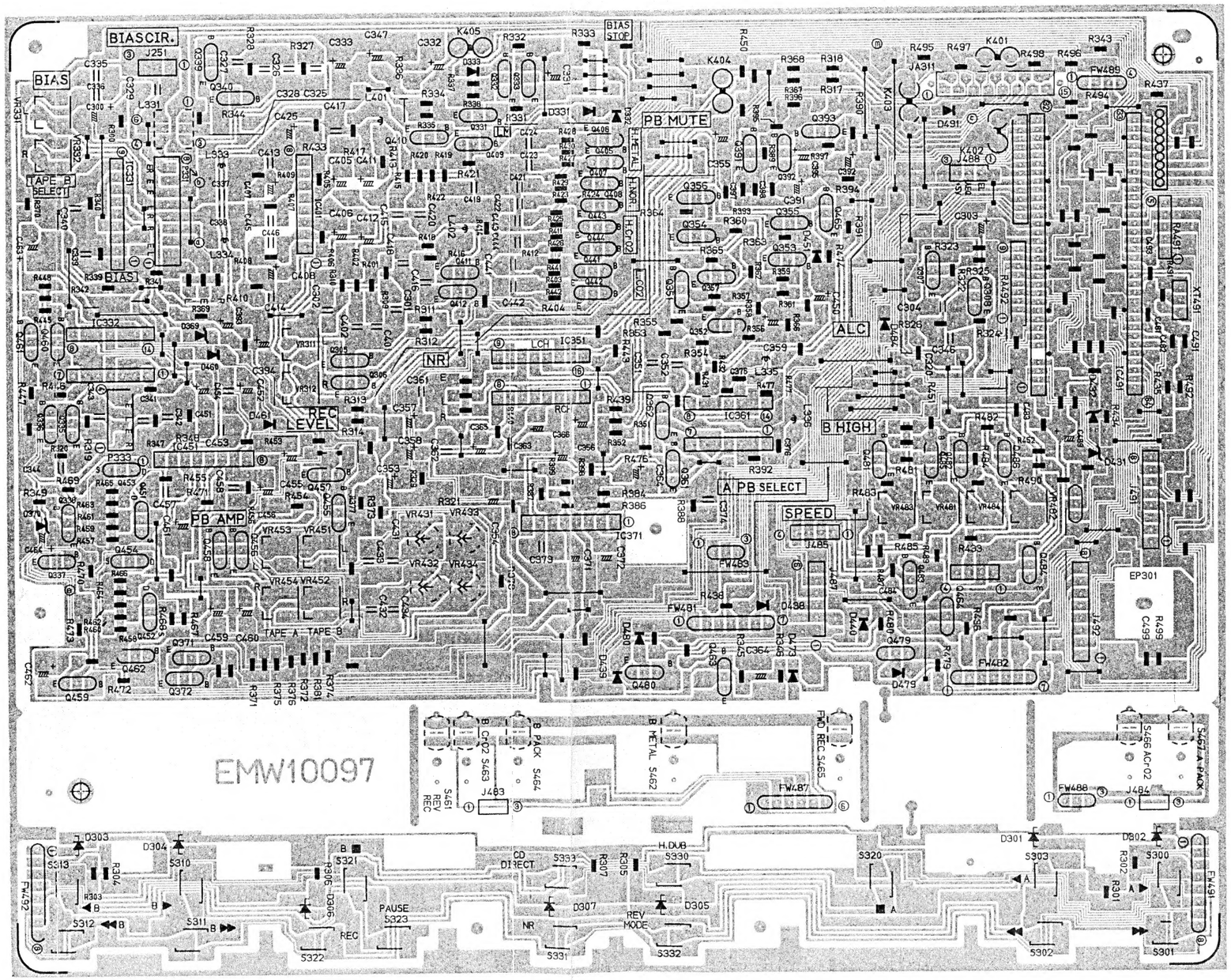


※ MARK	E,EF,V	G,GI	BS	VX
R160	18K	18K	8.2K	18K
R161,162	120K	120K	82K	120K
C160	100P	220P	100P	100P
C177,178	470P	470P	560P	470P
D154	NONE	USED(GI)	NONE	NONE
D152,153	NONE	NONE	NONE	USED

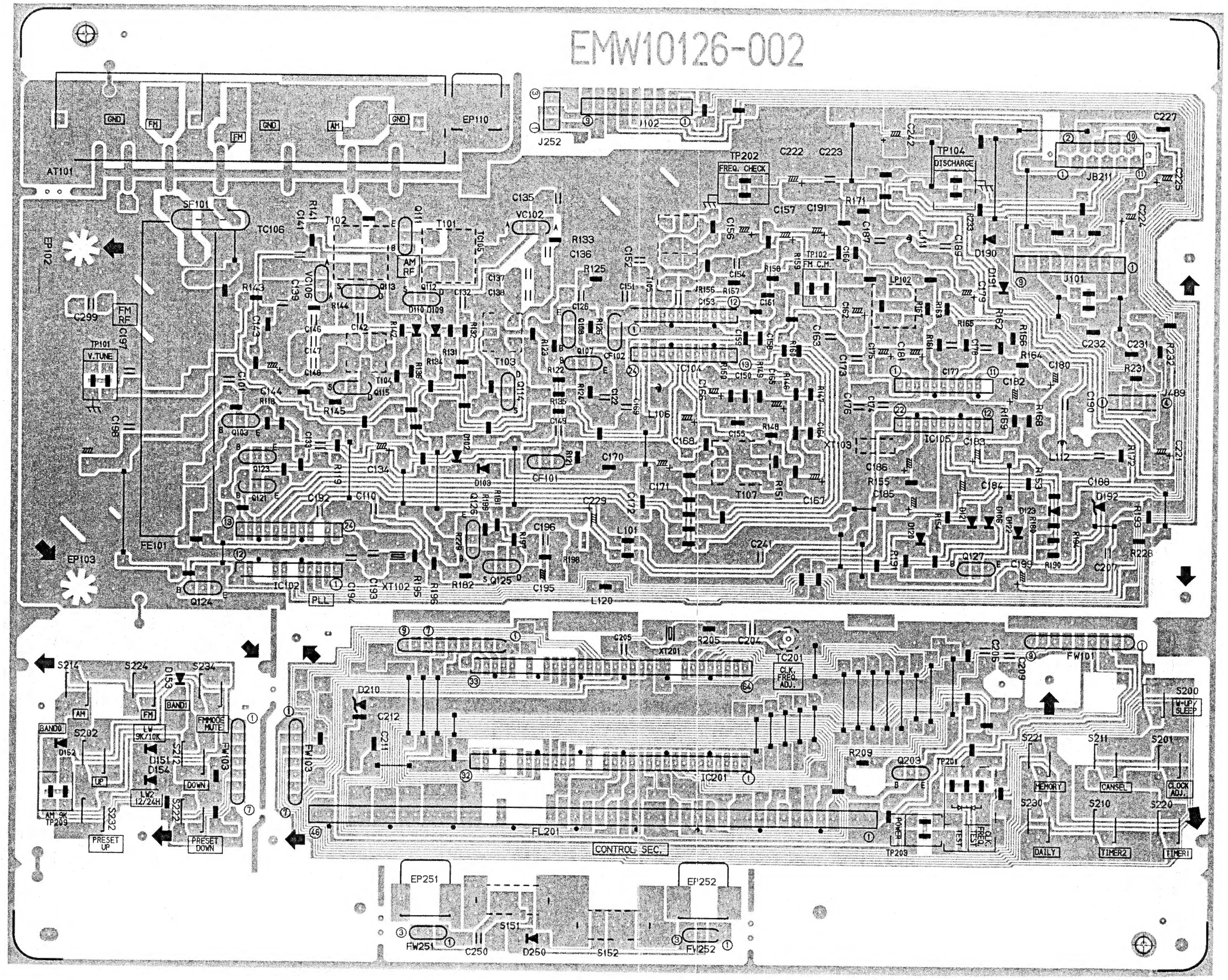
NO MARK DIODES ARE 1SS133

Printed Circuit Boards

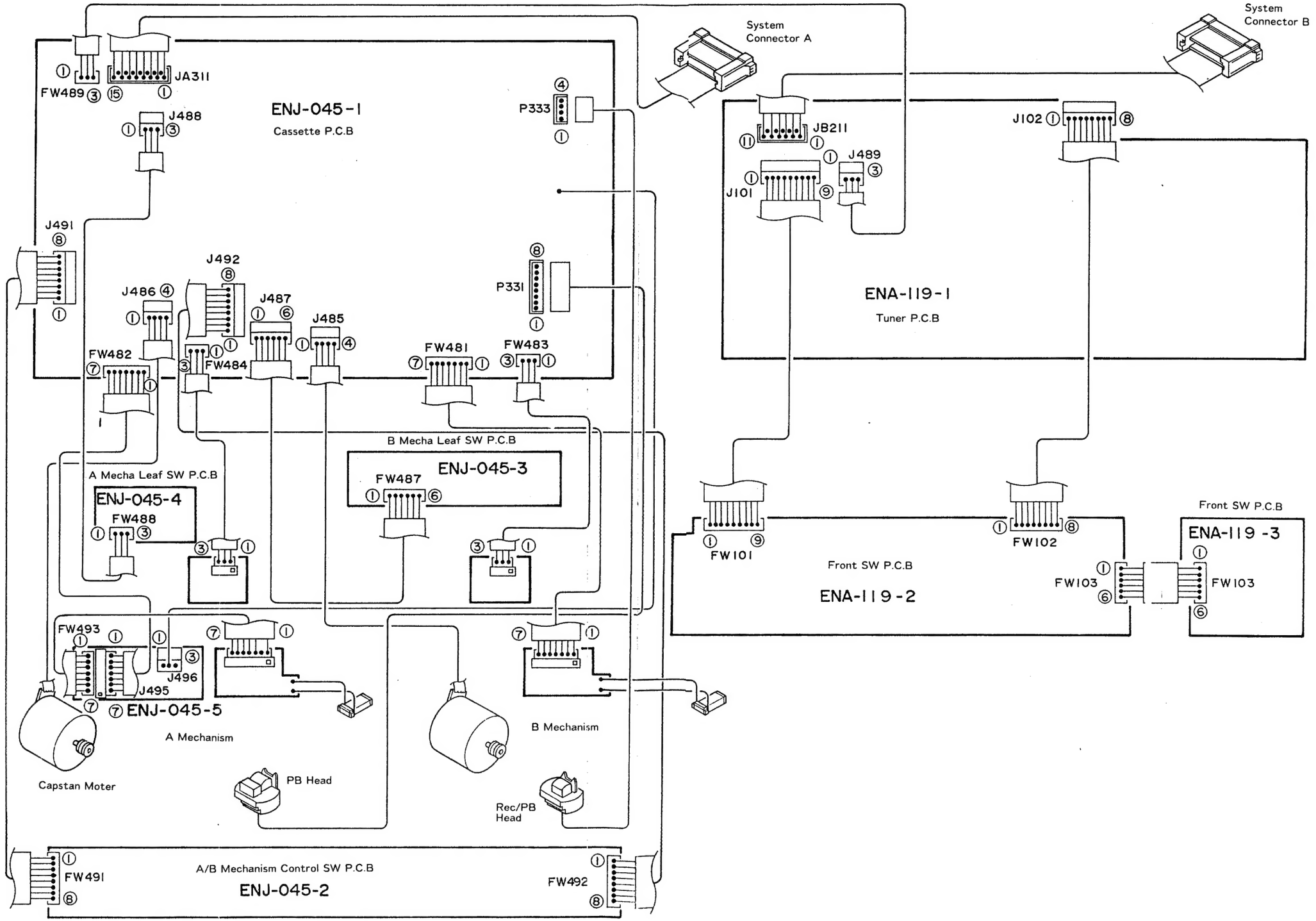
■ Cassette P.C.B (ENJ-045)



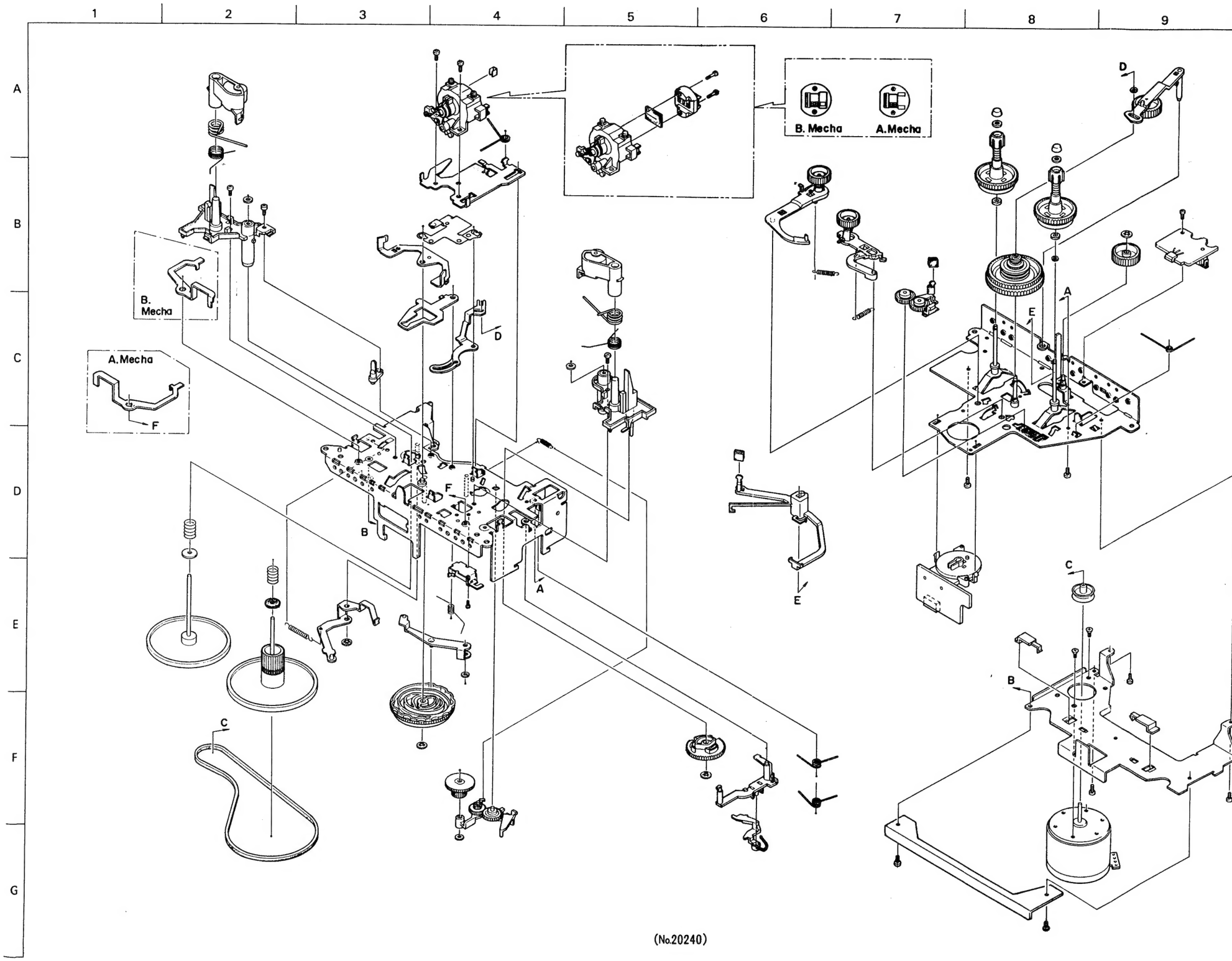
Tuner P.C.B. (ENA-119)



Connection Diagram



Application Points for Grease



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